97TH YEAR
SEPTEMBER 1958
Vol. 182 — No. 9

AMERICAN
Gas Journal

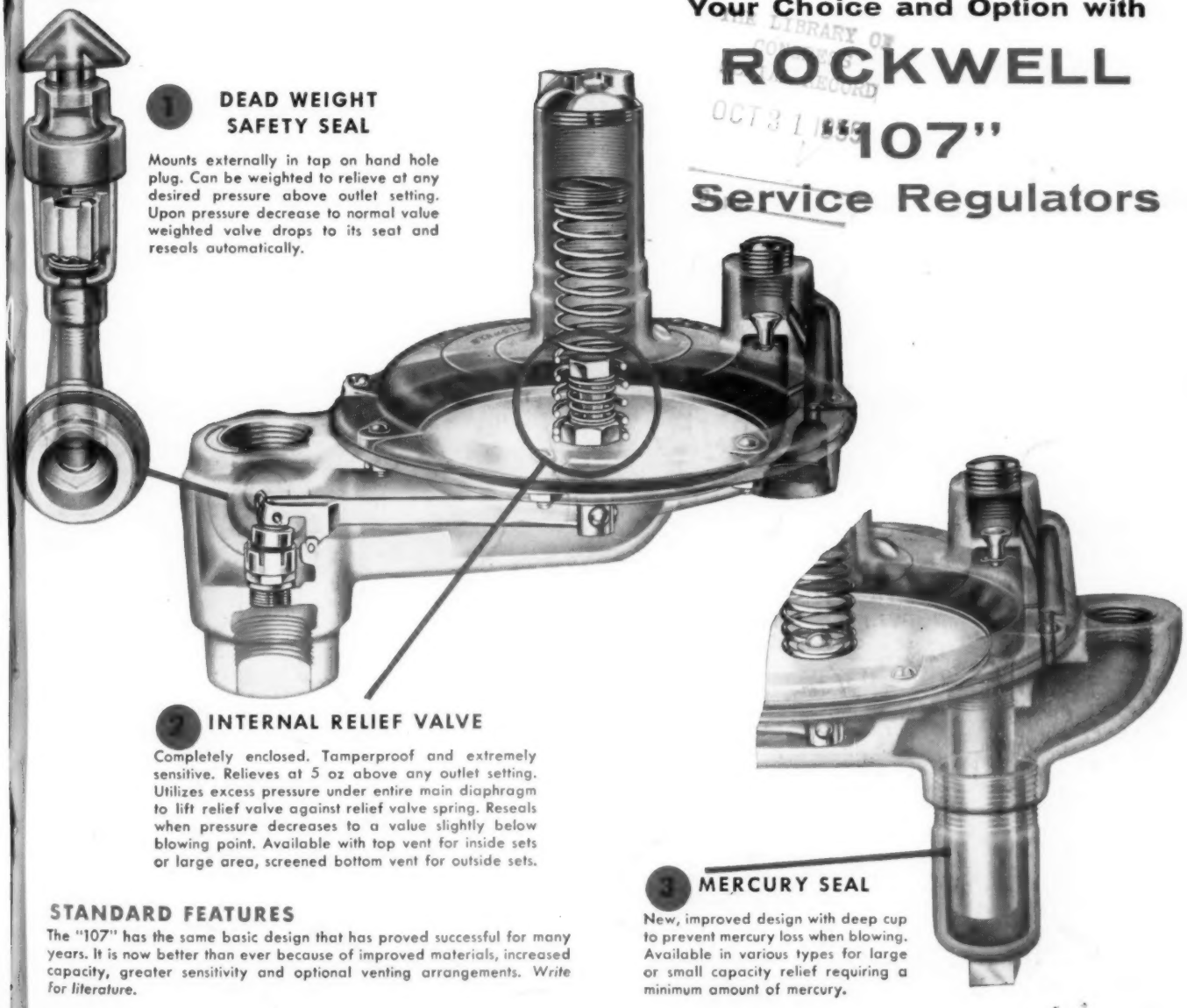
3 Effective Safety Seals

Your Choice and Option with

ROCKWELL

"107"

Service Regulators



1 DEAD WEIGHT SAFETY SEAL

Mounts externally in tap on hand hole plug. Can be weighted to relieve at any desired pressure above outlet setting. Upon pressure decrease to normal value weighted valve drops to its seat and reseals automatically.

2 INTERNAL RELIEF VALVE

Completely enclosed. Tamperproof and extremely sensitive. Relieves at 5 oz above any outlet setting. Utilizes excess pressure under entire main diaphragm to lift relief valve against relief valve spring. Reseals when pressure decreases to a value slightly below blowing point. Available with top vent for inside sets or large area, screened bottom vent for outside sets.

3 MERCURY SEAL

New, improved design with deep cup to prevent mercury loss when blowing. Available in various types for large or small capacity relief requiring a minimum amount of mercury.

STANDARD FEATURES

The "107" has the same basic design that has proved successful for many years. It is now better than ever because of improved materials, increased capacity, greater sensitivity and optional venting arrangements. *Write for literature.*

ROCKWELL MANUFACTURING COMPANY

Pittsburgh 8, Pa. Atlanta Boston Charlotte Chicago Dallas Denver Houston Kansas City, Mo. Los Angeles Midland New York Philadelphia Pittsburgh San Francisco Seattle Shreveport Tulsa

NO PEAKS! NO VALLEYS!

Servel

***All-Year*® air conditioning**

gives you a steady year-round demand

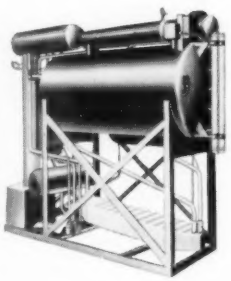
Here's one sure way to help "level out" year-round sendout. Wage a continuing, intensive campaign to promote the sale of Servel *All-Year* air conditioners on your lines.

Servel units can help you *Now!* They cool a customer's house in summer. And that means bigger and better warm-weather profits for you. And, of course, they heat in winter . . . maintaining cold-weather sendout.

Cash in on this year-round load builder. Push Servel *All-Year* air conditioning. Write for hard-selling promotion material and sure-fire sales plans. SERVEL, INC., Dept. AG-95, Evansville 20, Indiana.

PUSH SERVEL FOR BIGGER SUMMER SENDOUT

Servel "add-on" gas-fired cooling units turn winter users into all-year customers and tend to give you a more equal gas demand in hot weather and cold.



PUSH SERVEL FOR MORE COMMERCIAL AND INDUSTRIAL DEMAND

Servel water chillers provide controlled chilled water for industrial pre-cooling, process cooling, and air conditioning. Help maintain a steady, important volume load at profitable rates.

Servel

the name to watch for great advances in

AIR CONDITIONING ✓ REFRIGERATION

OCT 13 1955 B 558213

They go best together

The best gas odorant—The best odorant service

Alert "80"—*the best economy priced, quality mercaptan.*

Calodorant "C"—*the best quality cyclic sulfide.*

Today's more demanding operating conditions wrote the specifications for Alert "80." It has been proved in all types of distribution systems, has met every test by large and small utilities. Alert "80" is a selected and blended group of mercaptans with new blending and balancing—giving better, full range volatility and stronger initial "punch."

Calodorant "C" is the only natural gas odorant in use that is completely stable in high pressure lines—at extremely high and low temperatures—performs equally well at medium and low pressures.

Want To Simplify "Room Testing" Procedures?

Oronite's unique Odorometer offers the simplest way to test odor intensities in your distribution system. Ask for a demonstration on your system.

Want to know how to neutralize odorant "spills" or help on how to deodorize drums for re-use or resale? Ask Oronite about this or any other problem you may have—chances are we have already done the research and have the answer.

ORONITE CHEMICAL COMPANY

ORONITE CHEMICAL COMPANY

200 Bush St., San Francisco 20, Calif. • 714 W. Olympic Blvd., Los Angeles 15, Calif.
30 Rockefeller Plaza, New York 20, N. Y. • 20 North Wacker Drive, Chicago 6, Ill.
Mercantile Securities Building, Dallas 1, Texas • Carew Tower, Cincinnati 2, Ohio

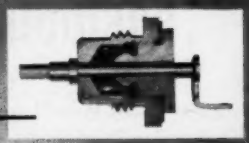
4 new extra values WITH American® Ironcase Meters

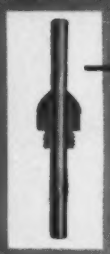
Year after year, *American*® meters cost you less to operate — assure you of maximum accuracy with least maintenance.

New flag rod and axle box grommet seals, now standard equipment in domestic Ironcase meters, are typical *extra values* developed through constant research for better materials, design and manufacturing methods.

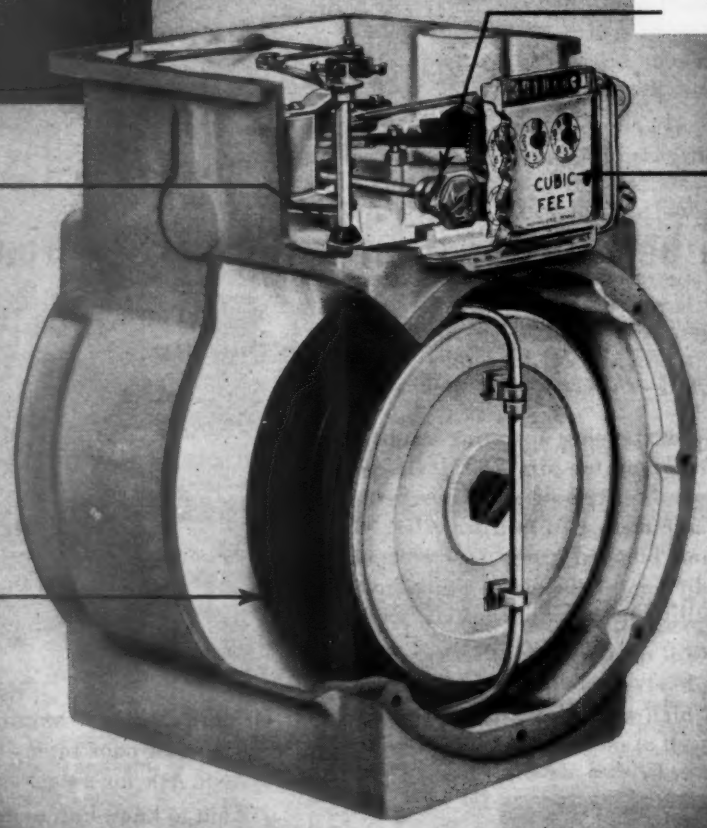
For any application of metering equipment, you are sure of the best when you buy American, the only *complete line* of precision instruments to assure you of "sustained accuracy at lower cost."

NEW composition axle box grommet seals prevent leaks and reduce friction to a minimum . . . no measurable leakage after millions of cycles. Unique design provides greater sealing ability at increased pressures—with no sacrifice in friction.





NEW composition flag rod grommet seals provide uniform, minimum friction and assure dependable, positive leak protection . . . sealing ability unaffected in normal vapor service with natural, manufactured or LP gas.



NEW plastic Index Box is easier to read—equally suitable for exterior or interior meter settings. Molded in one piece, the new box is impact and shock resistant... unaffected by ordinary exposure to the elements. Standard on all 3B, 5B and 10B Ironcase and 5B/225 Aluminumcase Meters.

NEW molded Duramic diaphragms developed and produced by American for applications requiring a rugged, composition material . . . provide years of trouble-free service.

New Meter Connection Package— Greater convenience in identifying, handling and storing meter caps and swivels with American's new packaging. These parts are now packed in small unit cartons contained within a master carton, labeled for ready identification — replacing barrels formerly used.

AMERICAN METER COMPANY
INCORPORATED ESTABLISHED 1836

GENERAL SALES OFFICE: 1513 Race Street, Philadelphia
Albany • Alhambra • Atlanta • Baltimore • Birmingham
Boston • Chicago • Dallas • Denver • Erie • Houston
Kansas City • Los Angeles • Minneapolis • New York
Omaha • Pittsburgh • San Francisco • Seattle • Tulsa
IN CANADA: Canadian Meter Company, Limited, Hamilton
Edmonton • Calgary

AMERICAN
Gas Journal

VOLUME 182 | 97TH YEAR : : SEPTEMBER, 1955 | NUMBER 9

This month...

ARE YOU "COMING IN CLEAR?"

Within the past few years a new phase of the business world has grown increasingly important. This once scoffed-at and now respected "baby" with the high-sounding title of Industrial Relations has been hogging more and more of the business spotlight. And it is increasingly apparent that the right arm of this important branch of business management is the long mistreated and ignored step-child—communications. Recent research has proved that your system of communications effect—and not a little bit—every phase of your business, from cost to morale.

How about communications in your organization—are you "coming in clear?" See what ideas Millard E. Stone has to offer in his article "Supervision . . . Key to Effective Communication." Page 17.

We nominate Southern Union Gas Company for some very toppish honors after getting all excited about their promotional brochure that pressures their Servel sales drive. That program is backed by display material, mailers, recipe book, kids' coloring book, newspaper advertising, television, radio, publicity, employee campaign. They have pushed everybody into the act—who could ask for anything more?

At the risk of having President C. H. Zachry and Director of Advertising Alta E. Evans blow their respective tops, we're going to "believe" it might be worth the effort if other gas utility presidents would *Dear Claire, May I please have . . .*

Results of this hard campaign to date. Ask the man! Story on page 33.

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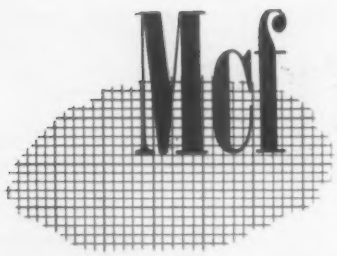


COAL INDUSTRY is still at it—at the gas industry, that is. One spokesman hopes and will urge Congress to amend Natural Gas Act "to restore equal competitive conditions among the several fuel industries." Coal group still refers to "unwarranted expansion of natural gas service."

CRITICISM OF FPC by coal industry centers on gas conservation, with an eye on FPC authorizations to utilize gas as boiler fuel.

NOBODY CAN AFFORD to regard continual carping by the coal crowd as a gas industry laugh-item. There is just too much billing at stake, and coal is still big politically.

RESEARCH is getting bigger and bigger in coal industry activities. Technologies and equipment have moved far from the stagnated levels of 1946. Big dough and big push are behind efforts to avoid literal death of that industry, with still unmeasured resources awaiting production, underground.

REPEATING: Don't laugh. Utilities are well advised to think very seriously about present gas loads that are competitive with coal—market-research the potentials—and then take appropriate individual and collective action in developing-supporting effective opposition to coal industry-inspired restrictions on gas sales.

FREE ENTERPRISE—If those words have not lost all meaning through over-use and misuse—free enterprise really is consideration when industry is challenged on what it may sell, to whom, for what ultimate purpose, and at what price.

RATE OF RETURN was consideration in recent Georgia commission hearings on South Atlantic Gas Company increase. Estimated rate, based on depreciated average investment was calculated at 6½ per cent.

WEST VIRGINIA rate case gave United Fuel Gas Company increase that is calculated at 6¼ per cent "return on its investment."

AMERICAN GAS ASSOCIATION board has authorized formal opposition to proposed change by Federal Communications Commission in the rules governing the frequencies allocated to utilities in "power radio service." Change would allow telephone and telegraph companies to apply for frequencies within power radio service band. Situation might well be clarified through meetings of AGA committee and Bell system representatives.

HOUSE HEATING GAS rates have now been reduced twice since natural gas was first received by Brooklyn Union Gas Company in 1951—each was a 10 per cent decrease. John E. Heyke, president, says company's costs for natural gas upped 25 per cent during period, so competitive position of gas would be much stronger with lesser cost increase.

FIVE BILLION dollars will have been spent by natural gas industry since 1945, when all projects okayed or pending on January 1 have been completed. Gas Appliance Manufacturers Association says so in data just released.

PIPE LINE GROWTH in year to June 30 added more than 4900 miles and more than 1.75 billion cubic feet of daily capacity, Federal Power Commission points out.

FLORIDA may get big supply of natural gas if apolication by new Houston Gas and Oil Corporation to FPC goes through. Plans are for 350 MMcf line, almost 1000 miles long. Big demand by citrus, mining, paper, chemical, and cement industries. After two years, capacity would be upped to 440 MMcf.

APPLIANCE MANUFACTURERS, NOTE: In view of broadening acceptance of principle that appliances must be sold to women in terms of today's realism, high importance can be attached to current study by major TV network. Done by independent agency, survey of 5000 women in their homes throughout country showed 36 per cent favoring magazines as their source of home service information. Newspapers were second with 24 per cent and TV itself third with an unrevealed rating. Top individual source was named as *Better Homes and Gardens.*

KEEP IN MIND that was national survey. It does not mitigate against excellent jobs such as those done on TV by Philadelphia Gas Works, Brooklyn Union Gas Company, and Caloric Appliance Corporation.

MORE ON TV: It's no small pleasure to find Brooklyn Union is about to resume the Dione Lucas cooking school show, which has been outstanding success for company.

MEN AT WORK are at record levels. Labor and commerce departments say new highs have been set for last three months, with August sampling at 65,500,000 at work.

MANUFACTURERS in all-industry are reported as shipping approximately $17 billion more in products during eight months than in 1954 months.

UNFILLED ORDERS are above $50 billion, estimates indicate. That's about 8 per cent above last year.

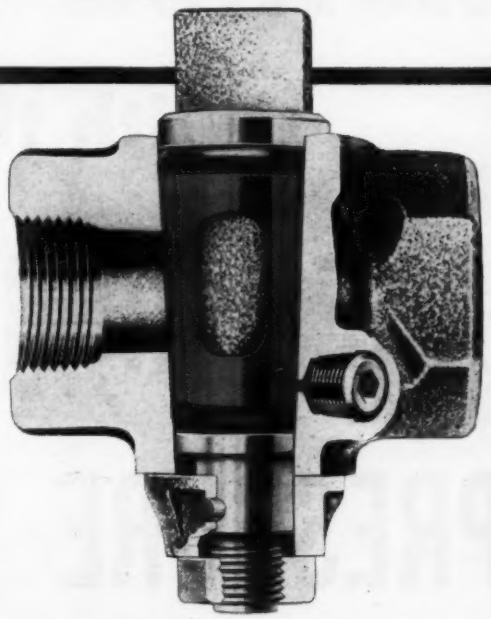
CREDIT BUYING of consumer goods is biggest factor in the continued upswing of that department.

Mcf Mcf Mcf Mcf Mcf Mcf Mcf Mcf Mcf Mcf Mcf Mcf Mcf Mcf Mcf Mcf Mcf Mcf Mcf Mcf Mcf Mcf Mcf Mcf Mcf Mcf Mcf Mcf Mcf Mcf Mcf

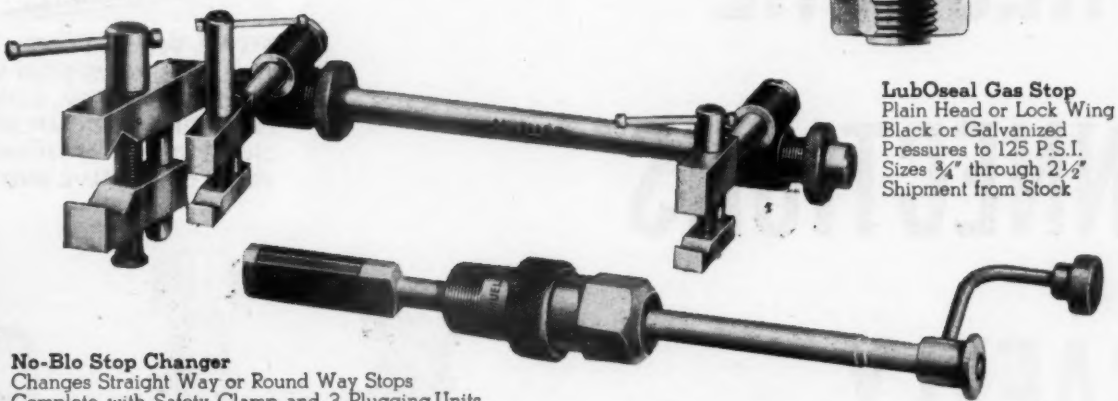
MUELLER®

Change to LubOseal®

Guarantee long life and safe operation by installing dependable LubOseal Stops with *all* the advanced meter stop features. Simply replace damaged, worn or obsolete meter stops quickly and safely *under pressure* with the exclusive No-Blo® Stop Changer. No shut-off or bucking of line pressure! No blowing of gas! Consult your Mueller Representative, Catalog G-97 or write direct for full details.



LubOseal Gas Stop
Plain Head or Lock Wing
Black or Galvanized
Pressures to 125 P.S.I.
Sizes ¾" through 2½"
Shipment from Stock



No-Blo Stop Changer
Changes Straight Way or Round Way Stops
Complete with Safety Clamp and 3 Plugging Units
For ¾", 1" and 1¼" Gas Stops
60 P.S.I. Operating Pressure—Safety Factor of 2
Shipment from Stock

NO-BLO®

MUELLER CO.

Dependable Since 1857

MAIN OFFICE & FACTORY DECATUR, ILLINOIS

MUELLER®

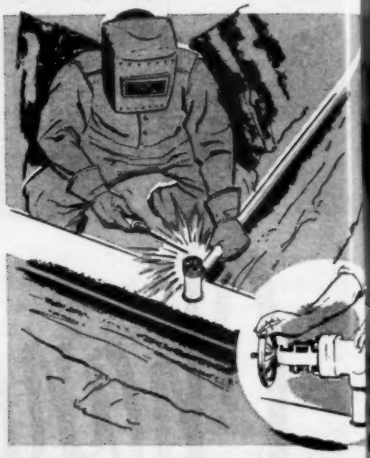
NO-BLO®

Method

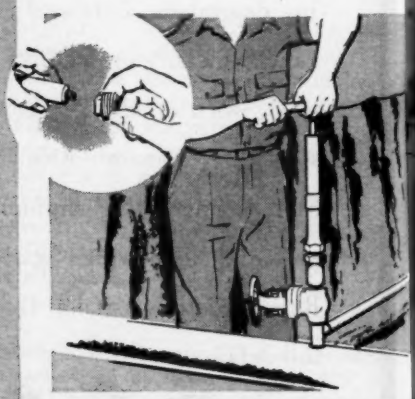
with the "DH-2" DRILLING

MAKES HIGH PRESSURE CONNECTIONS SAFELY...

This is another of a series showing the broad application of Mueller No-Blo® Fittings and the Machines used for their installation.



STEP 1. WELD! WELD FITTING TO MAIN AND/OR SERVICE LINE. TEST. THREAD MUELLER H-10916 HIGH PRESSURE STEEL GATE VALVE TO FITTING.



STEP 3. PLUG! FASTEN COMPLETION PLUG, VALVE STEM AND BUSHING OR VALVE STEM, DEPENDING ON FITTING, TO COMPLETION MACHINE. ATTACH MACHINE TO GATE VALVE, OPEN VALVE AND INSERT.

EXTENSION STOPPER FITTING

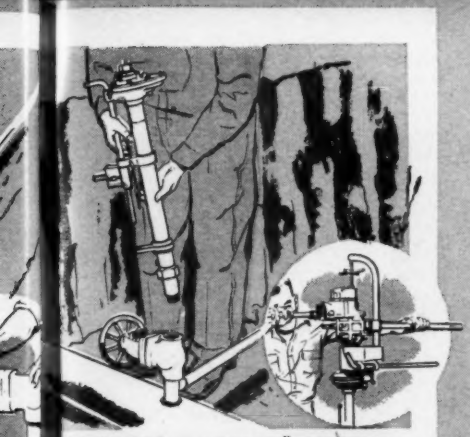
Used in new construction to make provision for future stop-offs or extensions . . . lateral extension type also available . . . welding or threaded type . . . inlet and outlet sizes 1½" and 2".

LINE STOPPER FITTING

Used to stop-off or isolate section of line to permit repair or replacement . . . no shutdown needed . . . welding sizes from ¾" through 2" . . . solder-braze sizes 1½" and 2" . . . mechanical joint sizes 1", 1¼", 1½", and 2".

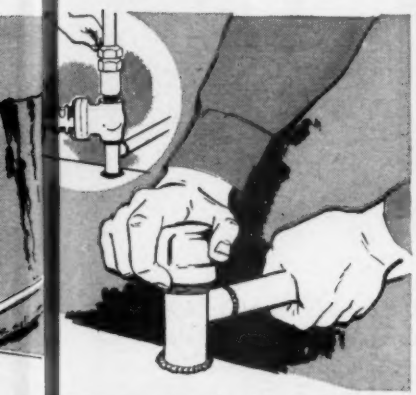
"SAVE-A-VALVE" DRILLING NIPPLE

Ideal for any tem-rary or semi-perm-ent connection . . . permits recovery valve upon abandonment of line . . . w-ing or threaded . . . outlet sizes ¾" through 3".



TEP 2. DRILL! ATTACH "DH-2" DRILL-
NG MACHINE TO GATE VALVE. DRILL
LE IN LINE, RETRACT BORING BAR
D CLOSE VALVE. OPEN BLEEDER
VALVE TO RELIEVE PRESSURE AND
REMOVE DRILLING MACHINE.

MACHINE



TEP 4. COMPLETE! OPEN BLEEDER
ALVE ON BOTTOM OF COMPLE-
ION MACHINE TO CHECK TIGHTNESS
F PLUG OR VALVE AND TO RELIEVE
RESSURE, REMOVE MACHINE AND
ALVE, INSTALL COMPLETION CAR

High pressure connections are made under pressure quickly and easily with the Mueller "DH-2" Drilling Machine. All operations are performed in perfect safety with no blowing of gas. No shutdowns necessary!
The "DH-2" drills from ¼" through 2⅛". Boring bar travel is 14". Working pressures to 1200 p.s.i. at 100° F. and working temperatures to 500° F. at 1000 p.s.i. May be hand-operated or power-operated with the H-600 Air Motor or H-602 Gasoline Engine Drive Unit. Tools are fed manually or automatically.

B VALVE TEE
as a control
or main con-
on . . . valve
inserted under
ure . . . welding
readed inlet . . .
ding, threaded,
nded, insulating
Dresser outlet . . .
et sizes from ¾"
ugh 2½".

VALVE TEE
Built-in valve provides shut-offs at any time . . . easily operated . . . welding or threaded inlet . . . welding, threaded, extended, insulating or Dresser outlet . . . outlet sizes from ¾" through 2".

SERVICE TEE
Used primarily as a main to service connection . . . may be stopped-off at any time . . . welding or threaded inlet . . . welding, threaded, extended, insulating or Dresser outlet . . . outlet sizes from ¾" through 2½".

For full details and specifications on the "DH-2" and No-Blo Fittings, consult your Mueller Representative, Catalog G-97 or write direct.

MUELLER CO.

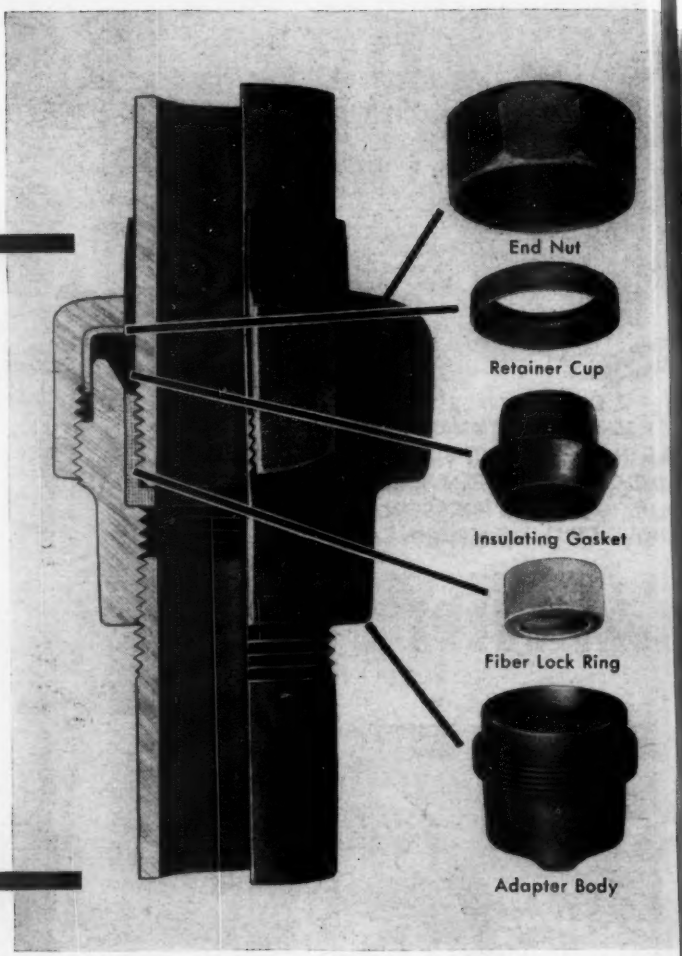
Dependable Since 1857

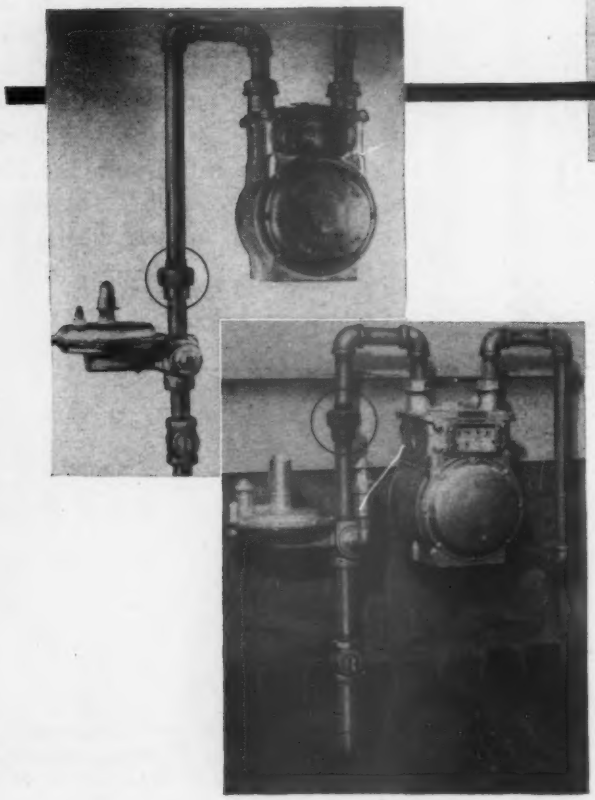
MAIN OFFICE & FACTORY DECATUR, ILLINOIS

INSULOK

ADAPTER

seals gastight, resists pull-out, blocks current flow!





Since its introduction, the Dresser Style 90 Insulok* Adapter has become accepted throughout the gas industry for setting meters and regulators—inside the basement and out!

Installation is fast, foolproof, trouble-free. Positive sealing is maintained by the rubber gasket *built in.* To meet the unusual strains of basement hookups, the fitting design provides extra safety and resistance to pull-out. Rigidity for good meter settings is assured. Damaging currents between main and house are blocked effectively.

Insulok fittings are available for a variety of applications, in ¾", 1", and 1½" sizes, in both male and female types. Wrench-installed like all other Dresser products, they go on quickly and easily, provide swift entrance into lines for servicing of meters and regulators, assure leakproof performance for life. Your Dresser Sales Engineer will give you full details.

*Insulok is a registered trade-mark.

DRESSER®

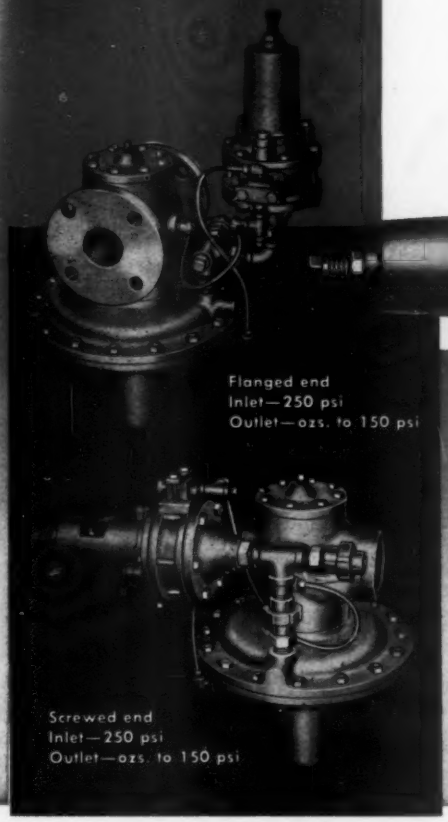
ONE OF THE DRESSER INDUSTRIES

FITTING PARTNER FOR THE GAS INDUSTRY

Dresser Manufacturing Division, 59 Fisher Ave., Bradford, Pa. Warehouses: 1121 Rothwell St., Houston; 101 S. Airport Blvd., S. San Francisco. Sales Offices also in: New York, Philadelphia, Chicago, Atlanta, Denver. In Canada: Toronto, Calgary.

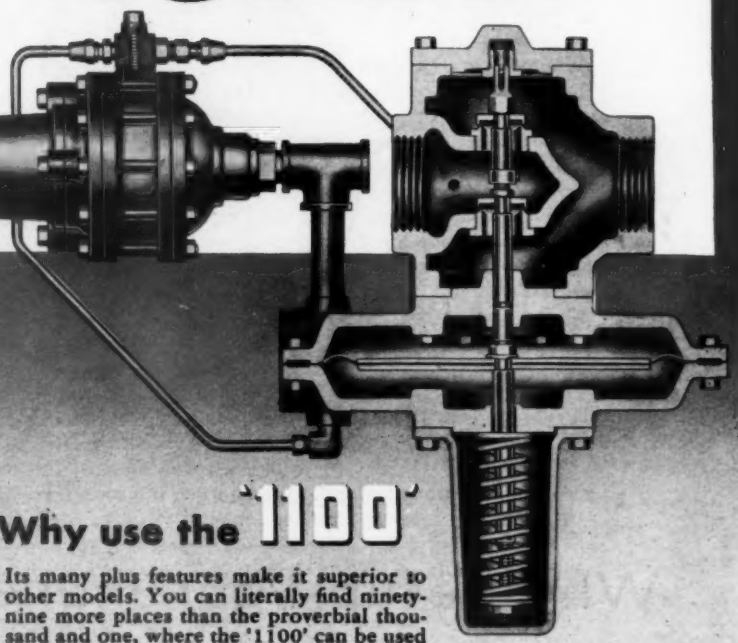
Chaplin-Fulton

why? '1100' regulator



Flanged end
Inlet—250 psi
Outlet—ozs. to 150 psi

Screwed end
Inlet—250 psi
Outlet—ozs. to 150 psi



Why use the '1100'

Its many plus features make it superior to other models. You can literally find ninety-nine more places than the proverbial thousand and one, where the '1100' can be used to advantage.

One basic assembly-2"-screwed or flanged.

- **WIDER APPLICATION**—inches water to 150 psi controlled pressure—means less different types to stock and service.
- **GREATER CAPACITY**—balanced valve construction passes 114,000 CFH at 100 psi to ounces—replaces larger costlier regulators to reduce cost of whole installation.
- **PROVEN PERFORMANCE**—straight line control from minimum to maximum flow. Stable operation on quick changing loads, or with on-and-off controls. Fast low lock-up on zero flow.
- **SIMPLER CONSTRUCTION**—no intricate parts or delicate adjustments. All wearing parts easily replaced. Regulator or pilot can be serviced without disturbing the other.
- **EASIER INSTALLATION**—compact design requires little space for installation in any position. Just place in line and make one connection from regulator to outlet line.

ACCURATE CF MFG CO DEPENDABLE

Chaplin-Fulton
MANUFACTURING COMPANY
Pittsburgh 23, Pennsylvania

Bulletin 1100 with complete information sent on request.

54-1100

Why tie up your money in communications equipment?

When you let the Bell System furnish your communications, you enjoy three important advantages:

1. *You avoid a large capital investment.*
2. *You don't have to worry about maintenance and obsolescence.*
3. *You get the benefits of trained personnel, expert supervision, continuing analysis.*

You don't tie up your money in communications equipment when you use Bell System facilities. This means you free this money to produce income.

A Bell System communications engineer will be glad to survey your communication needs. His study and recommendations are yours without cost or obligation. Call your Bell Telephone representative.

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Coming | **The Year's Most Important Opportunity for Communication**

QUICKLY, to avoid any obfuscation, the combined American Gas Association-Pacific Coast Gas Association convention is that "important opportunity."

With no thought in the world to casting any back-of-my-hand slaps at the convention program, this opportunity lies in off-the-program hours. They could and would hold high value to what we persist in regarding as the over-all gas industry: *Generally,* the utilities, pipe lines and producers.

Here, we have an opportunity for man-to-man communication that is not presented so advantageously at any other time in the year. If you prefer it, we'll switch from "communication" to "bull session"—just as long as there is free and full two-way expression.

Certainly, there is no need to labor the point on the necessity for such conversations. The word *dissension* has been used widely in the gas industry, including this page. The vital character of the timing of any efforts to dispel that dissension—completely—is obvious to anyone with even a casual knowledge of gas industry affairs.

This page, we hope, has not been guilty of sermonizing; indeed, not consciously. That would be abhorrent. It is not the object now.

Most often, the views, problems and vehemence of a segment of the gas industry are expressed during intramural sessions. And, the "amen corner" goes into action, full-tilt. But, mutual admiration societies usually don't accomplish very much. And, cross-fire in Congressional investigation rooms accomplishes less.

We insist that no differences in human or industrial relations have been solved by talking solely to favorably-biased ears. We insist that men in every segment of the gas industry can get closer to men in every other segment by the simple expedient of frank and intelligent talk. Talking it out is an effective emetic for dissension.

Sure, there are plenty of differences in the gas industry. They relate to the industry's segments and to its geographical distribution. But, is the gas utility executive certain that the pipe line company executive and the producer really know the full implications of his views and his problems? And—does he know theirs? The AGA-PCGA convention gives him an ideal opportunity to seek out, actively, the men who should know all about them. Then, with a ready ear, he can learn what's on the other fellow's mind.

Logically, these questions follow: Do individuals and the industry segments WANT to clear the air? Do they WANT the vast advantages of gas industry coordination and mutual cooperation from producer-to-pipeliner-to-distributor?

It would be most presumptive to answer those questions, but our constantly active interest in the well-being of the industry motivates the hope that they want both. Then, it's only a matter of setting aside the question of who will speak first. Quoting or misquoting somebody or other, pride goeth before the fall.

It can be done . . . it should be done . . . it must be done! John Merriam said that in his plea for teamwork.

Substantial talks, off-the-record and off-the-program, are overdue but not too late. Much could be accomplished with what could be started in Los Angeles, before Congress reconvenes.

Gentlemen: Talk it up and out!

Tough crossing of rocky and rapid Niagara River brings . . .

Southwestern Natural Gas to Toronto

When pipeliners recently pulled 2100-ft of 20-in. pipe across the Niagara River to link Trans-Canada Pipe Line with the facilities of Tennessee Gas Transmission, natural gas from the Southwest-to-Toronto was all but a reality.

The 80-mile Niagara-to-Toronto line connected with the distributing facilities of the Consumers' Gas Company of Toronto. Through the line, which will cost $7,500,000 when completed, Toronto will be supplied with natural gas from the United States until Alberta natural gas is available through the main Trans-Canada Line.

Canada Bechtel Limited, in charge of design, engineering, and construction, completed construction ahead of anticipated schedules.

Meanwhile, from Clarkson—15 miles west of Toronto—pipe line crews are working a dawn-to-dusk schedule, 7 days a week, to meet the November 1 deadline to bring cheaper and more efficient natural gas to Toronto consumers.

Barring unforeseen obstacles, that date should see completion of the 80-mile link of the Trans-Canada pipe line with the facilities of TGT at Niagara Falls. Through this line, Toronto is to be supplied with natural gas from the U. S. until November 1956, when Alberta natural gas will be piped through the main Trans-Canada line.

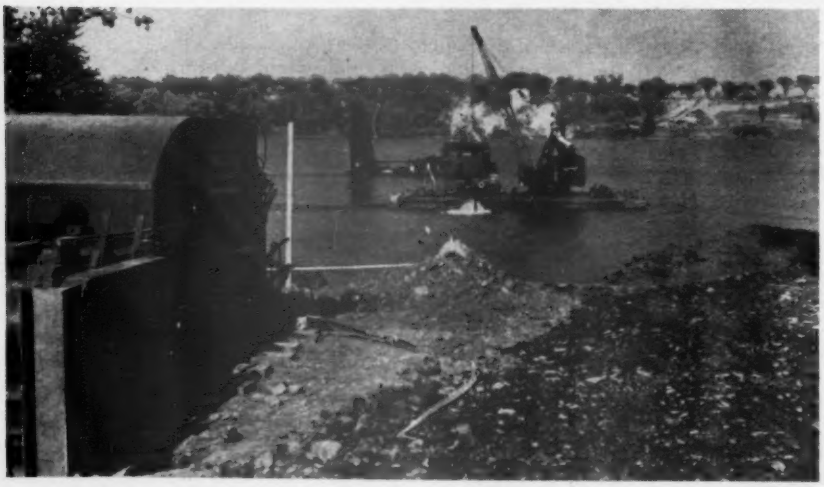
The Niagara crossing is about 3 miles north of the Lewiston bridge, where the bluffs level to a gentle slope. Major problems for the pipe line are the 8-mph current, described by the contractors as "one of the fastest we've ever had to deal with on a job like this," and the hard rock bottom of the Niagara River, through which a ditch had to be cut for the line.

Subcontractors for the crossing are Merritt-Chapman and Scott, blasting and dredging the ditch, and Collins Construction Company, with special equipment for pulling the pipe across the river.

Two pipes, each 20-in. in diameter and 2100 ft long, crossed the river, a day or two apart. When completed, manifold systems on both the Canadian and United States sides will provide for operation of either one or both lines.

Two ditches, each 7 ft deep, have been cut in the limestone bed of the Niagara River to receive the pipes. After each crossing the ditches will be filled by a dredging barge. "Skin" divers, operating from a boat equipped with a fathometer, kept a constant check on the ditches so that they were kept clear of silt drifting downstream.

Lengths of pipe, 30-40 ft long, and weighing up to 104 lb per ft, were welded together into "strings" for the crossing. Each length was capped at



Above, Trans-Canada Pipe Lines' right-of-way from Canadian shore. Winch, in foreground, pulled pipe across river through 7-ft ditch.

First 700-ft string of pipe, at right, pulled across Niagara River. Second string will be welded to the first.

American Gas Journal FEATURE

X-ray machine, photo above, probes weld joining pipe used in river crossing. All Niagara-to-Toronto line welds received similar checks. Cast iron weights, at right, weighing up to 3600 lb are clamped on pipe in preparation for Niagara river crossing.

both ends and air at a pressure of 100 psi pumped in to test for leaks. Then the pipe was wrapped to prevent corrosion.

Special Precautions

For the crossing, special precautions were taken to prevent damage to the anti-corrosion covering during the crossing work. An asphalt felt was put over the coating as a rock shield, and strings of 2-in. by 2-in. wooden slats were placed around that as additional protection.

Because there was not enough room on the American side of the river to string out the 2100 ft of pipe required for each crossing, the pipe was welded into 6 lengths—3 for each crossing.

When the divers and fathometer checks showed the ditch in the river bed to be clear, 8 tractors, equipped with side booms lifted the first string and carried it to the river bank where it was directed into the ditch. It was held off the ground while on the Canadian side, a winch anchored into the ground pulled the pipe which had been plugged at the leading end, across the river.

When the first length had been paid out, the second was lined up and welded to it.

As the winch pulled, the pipe was snaked across the river in the ditch. Cast iron weights, weighing about 3400 lb each had been spaced at 24-ft intervals to keep the pipe down. On the leading end, however, pontoons held the head of the pipe up so it skimmed over, rather than ploughed through the silt at the bottom of the ditch.

Divers Inspect

When the pull was completed, divers "walked the pipe" under the river to make sure it was in the ditch as planned.

When all checks showed the pipe to be properly positioned, the dredging barge filled the ditch and the way was cleared for natural gas to flow under the 54-ft maximum-depth of the Niagara River, en route to Toronto.

Expect Savings

Meanwhile, when Consumers' Gas Company pipe stringers were within 2 miles of completing their part of the project—a 21-mile link from Toronto to a point west of Clarkson, Ontario—officials of the utility met with the Ontario Fuel Board to explore revisions of rates. As a result of the conference it was certain that new natural gas prices would be reduced in order to compete with oil and electricity for all household uses, including heating. It was estimated that an ordinary family will save from 25-50 per cent of the present manufactured gas rates.

At present, manufactured gas costs the consumer roughly $2.50 per Mcf. Natural gas, it was assumed, would be available at approximately $1.30 per Mcf.

Fuel Board Chairman A. J. Crozier said it now costs Toronto gas consumers about $7.56 for 4 Mcf of manufactured gas, the volume used by an average family in a month. The new rates, he pointed out, would be decided at a future meeting with Consumers' Gas Company.

Consumers Gas Company is spending approximately $5,500,000 for its share in hooking up with the Niagara line, plus conversion costs. This 80-mile line, with an initial capacity of over 115 MMcf of natural gas per day, is part of the 2200-mile Alberta-to-Montreal gas transmission project being undertaken by Trans-Canada Pipe Lines Limited. The overall project included more than 2200 miles of 20-in. pipe.

A Build-Up for Market

The arrangement by which natural gas will be made available in Toronto this year, will enable Consumers' Gas to build up the market in its service area, in advance of the arrival of Alberta gas.

When Alberta gas is available, the Niagara line will be used to carry it into southwestern Ontario. It may also carry surplus Alberta natural gas back to TGT for distribution in the U. S. The latter firm has set a November 1 deadline for its contract with the Consumers Gas Company, but the speed with which the project is progressing will create no need for requesting an extension, officials are certain. In fact, company officials report Toronto will be hooked up with the new flow of natural gas on November 1, the same day the contract agreement takes effect.

Although complete conversion of the Toronto area is expected to take about 3 months, each district will be completed in about 3 days. At that, no householders will be without essential heating and cooking facilities.

The timetable for "turning in" a district bears all the precision of a military operation. This dramatic part of the program starts in the early hours of "conversion day" when purge crews burn off the manufactured gas in mains through street installations. This phase is scheduled for completion by 7 a.m.

Make Safe Round

Starting then, the "make safe" round takes conversion men to every gas customer in the district where they will turn off or temporarily adjust appliances. Water heaters will be shut off completely. Ranges may be operated with the exception of ovens and broilers. Furnaces and gas refrigerators will be set at reduced adjustments.

Men employed on the Consumers Gas project have been working a steady 7-day week, beginning at 7 a.m. and working straight through to 9 p.m.—or whenever it gets too dark to continue.

How to predict

Gas Main Capacity

D. W. McCafferty
C. V. Kroeger

Here is a "rule-of-thumb" that the authors have found reliable for determining when a gas main has reached or is approaching capacity: Effective capacity of a gas main operating at pounds per square inch pressure will be 80 per cent when pressure loss at the terminal point is 40 per cent of initial absolute pressure. A greater loss in terminal pressure, up to 100 per cent of the initial absolute pressure, will only result in 20 per cent additional capacity. Therefore, for practical purposes of design, when pipe line terminal pressures approach or begin to exceed 40 per cent loss of the initial absolute pressure, capacity requirements should be reviewed thoroughly.

● CHARACTERISTICALLY, gas utilities are obliged to keep pace with territory expansion and ever-increasing loads, with consequent operating and engineering problems.

The problems are usually in one of these forms:

1. A new system or line is to be designed to convey a certain volume of gas at a given rate of flow. The problem in this instance is determination of what diameter of pipe should be used. Methods of solution of this problem have been adequately presented in various papers given before the American Gas Association and other technical societies.
2. The capacity of an existing line is to be increased or other conditions affecting flow are to be altered where the line size is already determined. The question here is what maximum flow rate can be carried, how to increase the capacity when the present line attains capacity, and how to determine when maximum flow is to occur.

These are alternative methods of increasing the capacity of a gas line:

1. Increasing the operating pressure of the line. This method is limited by Section 8, American Standard Code for Pressure Piping, Article 841.1 Steel Pipe Design Formula, and Article 845.33 Maximum Allowable Operating Pressures for High-Pressure Distribution Systems.
2. Installation of another parallel line or replacement with a larger size main.

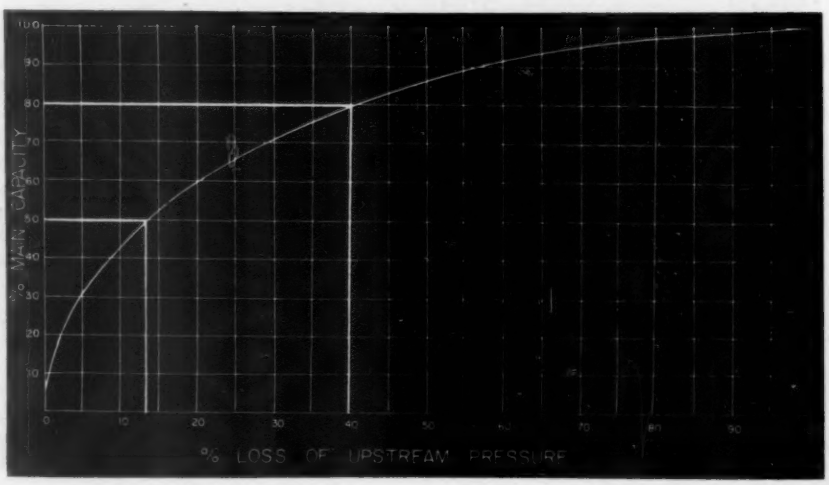
In any event, it is important to know from both an operating and design standpoint when any given line or system is nearing capacity. This is desirable in order to plan adequately new installations and also to operate the system satisfactorily.

Flow Formulas

A number of flow formulas has been developed over the years for the solution of problems involving gas flow in pipe. For the most part, these are empirical, having been developed as a result of adjusting flow factors to test results. They may be classified:

1. Formulas in which the flow factor is a function of the pipe diameter—Unwin, Oliphant, and Spitzglass formulas.
2. Formulas in which fractional exponents are assigned to pipe diameter, velocity, or flow—Fritzsche and Weymouth formulas.
3. Rational solution in which the flow factor "f" is a function of pipe diameter, average velocity, density, and absolute viscosity of the fluid.

The empirical formulas have gained wide acceptance in use by the gas industry and fall into the first two categories. The extension of the rational solution into the gas field has been slow in gaining acceptance. The rational method was pioneered by Stokes and Reynolds and has progressed to an advanced state within the last 20 years so as to make it a reliable tool.



The Authors

C. V. Kroeger

D. W. McCafferty

An examination of the empirical formula in Table 1 will disclose that all have one term in common, $\frac{(P_1^2 - P_2^2)}{L}$ and that all the other variables are carried out to different mathematical expressions. These variables include such considerations as specific gravity, pipe diameter, flowing temperature, and friction factors.

TABLE 1.

Fritzsche Formula

$$Q = \frac{3050}{50.462}\left[\frac{(P_1^2 - P_2^2)\ d^5}{L}\right]^{0.538}$$

Panhandle Formula

$$Q = 435.87\left[\frac{(P_1^2 - P_2^2)}{L}\right](to/Po)^{1.07881}$$
$$X(1/T_f)^{0.5394}\ (1/G)^{0.4606}\ E\ (d)^{2.6182}$$

Spitzglass Formula

$$Q = 3410k\sqrt{\frac{P_1^2 - P_2^2}{SL}}$$

Unwin Formula

$$Q = 2745\sqrt{\frac{(P_1^2 - P_2^2)\ d^5}{\left(1 + \frac{1.714}{d}\right)sl}}$$

Weymouth Formula

$$Q = 36.926\ d\ 8/3\sqrt{\frac{(P_1^2 - P_2^2)}{L}}$$

Rule-of-Thumb

It can be shown that the effective capacity of a gas main operating at pounds pressure will be 80 per cent when the loss in pressure at the terminal point is 40 per cent of the initial absolute pressure. A greater loss in terminal pressure, up to 100 per cent of the initial absolute pressure, will only result in 20 per cent additional capacity. Therefore, for practical purposes of design, when pipe line terminal pressures approach or begin to exceed the 40 per cent loss of initial absolute pressure, capacity requirements should be reviewed thoroughly.

Derivation of Rule

The Weymouth formula has gained wide acceptance in the gas industry and may be used to demonstrate and prove the above premise. The same method may be applied by any of the other standard flow formulas. The Weymouth formula, in its usual form, is written as follows: (Assuming standard gas conditions 14.4 psi, 60 F flowing temperature, and 0.60 sp gr):

Q = flow of gas, cfh
d = actual pipe I.D. inches
L = length of pipe, miles
P_1 = initial pressure in pipe, psi
P_2 = final pressure in pipe, psi

When a specific pipe or segment of pipe is under study, the diameter and length of line are constant. Thus, the actual capacity of the line is determined by the inlet and outlet pressures. The equation then reduces to:

$$Q = K\sqrt{P_1^2 - P_2^2}$$

Setting $K = 1$, the formula becomes:

$$Q = \sqrt{P_1^2 - P_2^2}$$

When $P_1 = P_2$, $Q = 0$ because there is no flow through the line. One hundred per cent of the line capacity will be attained when P_2 = atmospheric pressure. Assuming various losses in pressure, the capacity may be calculated and plotted graphically as in the accompanying chart. Examination of this curve will disclose that when the loss in pressure at the outlet is 13.5 per cent of the inlet pressure, 50 per cent of the main capacity has been lost. The slope of the curve changes radically, until 100 per cent loss in pressure corresponds to 100 per cent main capacity. The selection of the 40 per cent loss of upstream pressure as the basis for the rule-of-thumb is an arbitrary one. When this condition has been attained, 80 per cent of the main capacity has been utilized. At this point, design of new facilities should be undertaken.

Application of Rule

Table 2 applies the 40 per cent rule over a wide range of pressures and, for convenience, inlet and terminal pressures have been listed in gage units. It should be noted that when the inlet pressure is below 50 psi, 40 per cent of the absolute inlet pressure deviates slightly from the 80 per cent capacity because of the effect of the absolute pressure.

For illustration, this hypothetical problem uses the 40 per cent rule.

Assume a high pressure trunk line is designed to operate with a maximum initial pressure of 60 psi. The trunk serves an area whose load is increasing rapidly due to new house heating installations. A recording pressure gage indicates that, under peak load conditions, the terminal pressure is 35 psi. When will the line reach capacity? When should a new design be considered to supplement this trunk?

TABLE 2.

Inlet Pressure psi	Terminal Pressure 80% pipe capacity
5	3*
10	3*
20	9
30	15
40	21
50	24
60	30
70	36
80	42
90	48
100	54
110	60
120	66
130	72
140	78
150	84
160	90
170	96
180	102
190	108
200	114
210	120
220	126
230	132
240	138
250	144

**Lowest pressure for i-p service regulator operation.*

It is apparent from Table 2 that the line is nearing capacity since a pressure of 30 psi would be 80 per cent of the line capacity. If more specific information is required, the exact percentage of loss of the absolute upstream pressure may be calculated. The loss of upstream pressure in terms of percentage of the initial absolute upstream pressure loss is 33.3 per cent. Reference to the chart gives a reading of 74.5 per cent main capacity.

Simplified procedures result from recognition that gas flow formulas have so many variables that ordinary mathematical solutions are rendered tedious and impractical. This method is not intended to replace more detailed calculations that are necessary for actual design of new facilities. It does present, however, a rapid and accurate means of checking a large system to determine when segments will require replacement or supplemental main to meet capacity requirements.

PSC Considers Merger Plan

The Public Service Commission held hearings September 14 on the proposed merger of Washington Natural Gas Company with Seattle Gas Company. If approved, the merger will be on a share-for-share basis, with Washington Natural the surviving company, and will be effective November 1.

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SUPERVISION . . .

Key to Effective Communication†

Millard E. Stone*

Radio, television, letters, telegrams, pamphlets, manuals, all substitute for face-to-face communications —Supervisors can generate more personal understanding and add to effectiveness of written word

JUST a year ago, in the great city of New York, there was a dramatic instance of complete failure of communication. A man had been arrested, charged with felonious assault. Consistent with due process of law, he was arraigned promptly before a city magistrate. Now in New York, as well as in all other states, an accused is entitled by Constitution to be informed of the charge against him.

There was a difficulty in this case: The accused could neither hear nor speak. So the legal machinery encountered its first obstacle. Quickly a court clerk wrote out the charge, and held it before the prisoner's eyes. His reaction was an unconcerned shrug, and a shake of his head. You guessed it! He couldn't read.

An expert in sign language was summoned . . . still no results. The accused again shrugged and shook his head. Here was the ultimate in "failure of communication"—in a most vital situation. No "lines of communication" could be found. Unless the prisoner could be made to know the nature of the charge against him, there could be no valid prosecution. And there seemed to be no way to reach his understanding.

The helpless magistrate conferred with the prosecutor and with the defense attorney, who had been assigned by the court. They got nowhere. Meanwhile tension had begun to grow in the crowded courtroom; voices rose in conversation; there was uneasy, nervous laughter. Finally the case was adjourned, to give the judge and lawyers time to figure out a solution. For the time being, let us leave them there, in search of their solution, while we examine the fundamentals of their problem.

As we left them, they had failed to find the *key* to communication. We don't need to overexercise our imagination to figure out a way in which they might have reached his understanding quickly. Certainly *someone* had been getting through to him in the normal course of his life—someone up to then must have been making him understand. Some person *who had lived with him* day by day would be the logical one to serve as the means of communication between him and the authorities. The solution, then: Find that someone, get that someone to understand, and thus transmit the message to him.

Employees *Want* to Understand

In one vital respect, there is a wide difference between the problems of company communication and the story I have just recounted. In the courtroom scene, we cannot be certain that our man was capable of understanding or, in fact, that he *wanted* to understand. By sharp contrast, we know that, in industrial communications, the audience not only is capable of complete understanding, it wants almost anxiously to be informed so that it *can* understand. The problem does not arise through any deficiency in the audience, whom we of industry try to reach. Where we are not being heard and understood, it is usually because we are not using the truly effective methods of transmission. Too often we fail to recognize the management "someone" who lives with the employee day by day and offers the most effective means to get through to his understanding. Obviously, that is the supervisor.

For the supervisor is the one person best situated to get management's message across to his subordinates. It is he who literally lives with his people in their working lives. It is the supervisor who has the continuous task of making matters clear to the employees as they go about the day's work. It is the supervisor who is in the best position to evaluate worker attitudes, to know how management messages will get maximum employee response. In short, the supervisor best understands the people in the rank and file. Also he is in the best position to understand management and the messages it is seeking to get through to the employees.

Notice that I have been speaking in terms of the supervisor's *potential* usefulness in industrial communication, by virtue of his vantage point in any company. Too often management overlooks him when it seeks to communicate—or else fails to make maximum use of his role as a communicator. (His importance is accentuated, if we just think for a moment of the damage that the wrong kind of supervisor can do to the most expert management communications. I need not dwell on the point, I'm sure.) Like the "someone" in the courtroom stalemate, the supervisor is—or can be made to be —the most effective medium for transmitting the content of management's mind to the understanding of his subordinates . . . and, in reverse, for relaying employee reactions and attitudes back to management's own understanding.

Communication's Goal: Action!

It should be clear by now that the purpose of industrial communication

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†Presented to a session on training during the 20th Midyear Meeting of the American Petroleum Institute's division of refining, in the Jefferson Hotel, St. Louis, Missouri, May 9, 1955.

is not merely the transmission of facts and information from a dimly known, abstract entity called "management" to a group of people who are to be merely the repositories of such facts. The unchanging goal of communication in industry is, first, to reach the understanding of the people and, second, get the people to respond to the message—demonstrating their response by effective, cooperative action. The "effective, cooperative action" which management seeks is quite simple to express: Management desires its employees: 1, To *want* to do their best work; and, 2, to strive to do it. It is really as simple as that. (In days gone by it was called "efficiency"; but efficiency is a word which many people avoid using in connection with employee relations, these days.)

What I want to emphasize is that communicating just for the sake of communicating is a mistake. Yet many companies do it. Let us keep in mind that the communication *I* am discussing is the kind which is a means or an instrument for achieving cooperative, willing effort on the part of the employees. It must be regarded as a part of the whole employee-relations package. It is an important, vital part of employee relations—but it is not the whole package, and should never exist just for its own sake. If we succeed in gaining a common perspective on this one point, you and I will, I'm sure, be in general agreement on my main premise: That *supervision* is the key to effective communication; that, unless supervision is allowed—no, *required* —to fill its correct slot in employee communications, the most ambitious other types of communications will fail.

First, let's see why written or filmed or other visual communications should not be expected to carry the whole burden—or even the main burden of management-employee communications. Well, for one thing, all forms of human communication other than face-to-face talk are substitutes. Radio, television, letters, telegrams, magazines —all are substitute ways which the message sender uses because he cannot communicate face-to-face. In the same category, business memoranda, bulletins, house organs, employee manuals, and public-address systems are adopted by management men because they cannot possibly present their message or tell their story to employees individually and in person.

My contention is that, in the delicate area of management-employee communication, an impersonal substitute can be a dangerous device to rely on as the exclusive medium of creating mutual understanding. Not that it is impossible to be misunderstood in face-to-face transactions. That can and does happen every day. But precisely because there is always this risk of being misunderstood or only partly understood, we in management should seek to reduce the risk, and should avoid relying exclusively on media which can be "interpreted" or distorted. We know, for instance, that two people of the same intelligence can get entirely different impressions from the same newspaper story. Similarly—and to a greater extent—employees can "read between the lines" things which were never intended when the employer composed and dictated his bulletin or memo. If he were there to explain and to answer questions, it would be unlikely to happen—but, in his absence, the piece of paper cannot answer for him, or correct wrong impressions.

Personal Communication Ideal

There is another reason why reliance on substitute media to carry all of management's messages is ineffective. We are living in a skeptical age. People generally are less inclined to accept what they read on its face. Often, therefore, a company publication is received as "management propaganda." For some reason or other, both those words in combination seem to portray something to suspect. Actually, of course, there is nothing wrong with "propaganda" or propagandizing — it means nothing more than spreading the word. The word "management" runs into trouble because it is an abstraction. It is a collective word that, unfortunately, never is thought of as representing a group of flesh-and-blood individuals who have their own personal problems in addition to the hundreds of crucial business problems they must solve every day. So, on two counts, such substitute media as bulletins, house organs, etc., must be rejected as the exclusive ways to communicate:

1. They are impersonal.
2. Employees tend to suspect the motives behind them.

In combination with correct management attitudes being personally and skillfully communicated, written and graphic media can successfully supplement such personal communication efforts, however.

Now, who is to assume this personal communication task in behalf of management? Obviously it must be management itself. But how can the owner or president of a company possibly convey his messages in person? The answer is, of course, he can't—neither can most of his top associates. They just cannot divert the time from their decision-making functions in order to get around among the employees every time they should. Well, in that case, how have they "managed" their employees' work? By establishing a whole class of management individuals called "supervision." These people constitute the only day-in day-out management communicators who can get the employee to understand management and go on from there to win responsive, effective, cooperative action. In fact, for most employees, these are about the only "management" the employee gets to talk to regularly.

Supervision is indeed—as we have all contended—genuine, face-to-face management. Unfortunately it took a "high-court" decision to make some of us fully realize that our supervisors and foremen were more than the "traffic cops of industry." But, in the almost 10 years which have ensued, we have progressed substantially toward making them truly members of the management group. There is still much to be accomplished, however, and a great part of what needs to be done can, in my opinion, be achieved by greater recognition of the supervisors' role in management-employee communications.

The supervisor's day's work is, in fact, devoted to communication. The "instruments" of his daily work are the people he supervises. His skills are not merely to be found in his knowledge of the group's work goals —they extend, rather, to his capacity for getting his people to recognize the goals, have the *will* to achieve them, and then *work* to achieve them. To express it by a comparison: Top management's skills are exercised in arriving at sound business decisions; front-line management displays its skills when it gets its subordinates to go into action in furtherance of those decisions. Clearly, if top management does not effectively communicate its own decisions and business goals to the supervisor, he cannot direct his people properly. Equally clearly, if the supervisor does not communicate effectively to the specific work group, they cannot efficiently put out the product or render the service, as management wants it done. It seems apparent, therefore, that there must be clear, definite communication from top management to supervision, and from supervision to the rank and file.

No Leadership Without Effective Communication

But clarity and definiteness are not enough. The rank and file may understand fully what is wanted. But that does not mean that they will put forth their best work effort in order to accomplish it. It is in this area that another phase of supervision's communications role comes into play, viz., in the supervisor's human relations—in the

manner in which he deals with his people. And dealing with people is nothing more nor less than communicating with them. Have you ever noticed how frequently we evaluate a member of supervision in these exact terms: "Sure knows the job. Knows how to handle people." More and more, we of industrial management have tended to put the emphasis on the second quality —"knows how to handle people." Now "handling people" doesn't mean anything except *dealing* with them, *communicating* with them. Thus the key qualification of supervision is the capacity to communicate . . . to communicate ideas, knowledge, objectives, understanding . . . but, above all, enthusiasm, encouragement, and the will to turn out more and better work.

One all-embracing word to cover this communication role is "leadership." Unless he can communicate effectively, the supervisor can never lead. Unless he can lead, it is useless for him to try to communicate. The two go hand in hand.

Now how can management make sure that its supervision is *leading* effectively? One way—and it is a familiar one—is to require frequent, systematic reports from each supervisor. This accomplishes two things: It informs management, of course; and, in addition, it puts the supervisor into the mainstream of company communications. If the results reflected by such reports are not up to expectations, middle or higher management can take a look to find out why. If the reports do not accurately reflect what is actually being accomplished in the work unit, it will not be long before any variance from the facts will be exposed. So that, in the sense of routine work communication, it is obvious that the supervisor plays a key part.

But what of employee attitudes? you may ask. How does the supervisor fit in there? My answer is that, by and large, employee attitudes—or morale, if you wish—will be determined in greater measure by the supervisor's skill in handling his people than by any other means available to management. It is he who has to give the orders and see that they are executed. It is he who has to commend or criticize the employee. The manner in which he does either will strongly influence the work group's morale. If he is a bull o' the woods, out of tune with top management's way of conveying its wishes, then all the morale publications which can be printed won't improve the employee's evaluation of management — unless they happen to like a bull o' the woods-type boss . . . and some people do! If he is the overconsiderate type, who is so preoccupied with the "good-feelings" of his subordinates that he doesn't care about work goals, then all the cost consciousness campaigns which management may undertake will be a waste of time so far as that group is concerned.

This spells out the need for meticulous selection of candidates for promotion to supervisory jobs. It indicates that it is not enough that a man be a producing demon as a rank-and-filer in order to qualify him for supervision. Nor does an inefficient man who has the gift of getting along with people meet my ideal of supervision. What we must look for is a balance of qualifications—never settling for a man with weaknesses that seem beyond strengthening. And one of the key ingredients in the candidate for supervisor is the twofold virtue of being able to understand management and to communicate that understanding to his subordinates.

Supervisors Lateral Communications

At this point, let us note that the supervisor has lateral communication functions in addition to those with upper management and with his subordinates. If his modes of communication with supervisors at the same level but in other units are not good, we are apt to find internal warfare developing. Friendly rivalry between departments or units is one thing; cut-throat is quite another. Unless there is a feeling of mutual respect based on mutual understanding at this communication stage, we shall not have overall effective, cooperative action.

Many a time we have seen a company held back because one department was feuding with a neighbor. The reason usually is that the company's general goals are being ignored in the interdepartmental competition. The goals of the specific group overshadow the company's objectives. If top management takes a hand when it detects such a development, however, it can, by establishing sound communications, give proper direction to these misspent energies. And, obviously, the place to begin this communication therapy is with the supervisors of each group. Here we have another illustration of the key situation of supervision in industrial communication.

To what extent should supervision participate in the origination of communication? Assuming, for example, that top management wishes to inform employees of some new policy, how should supervision be integrated into the preparation and publication of it? That can best be answered by reminding ourselves of one important fact: *Supervision represents the best fact-finding agency in the company.* If the management wishes to have an accurate forecast of what employee reaction is going to be, it need look only to its supervisors for it. If it is seeking the best method of publicizing the new policy, its supervisors can probably furnish the answer. If there is some doubt as to how effective certain language will be in getting cooperation with the new policy, again the supervisor can make good suggestions.

Naturally top management cannot be running to supervision every time it wishes to issue a bulletin. But, where it does get supervision's help in planning the communication procedure and content, it's a certainty that the supervisors who participated at the point of origin will be enthusiastic in backing up management's position—because it is their own position. Whether you will want to bring supervision in to help make such decisions will depend, of course, on the content of the communications and the amount of help you think the supervisors may be able to give. But bear this in mind, if you will: If there are two or more supervisors of equal standing in the organization and the communication affects all their groups, it may be disastrous to leave any of them out of the discussions unless you are able to give a sound explanation for such omission to the "left-out" supervisor.

In much the same connection, how often have we not seen supervisors dropped several pegs in stature because their subordinates had been "given the word" before the supervisors themselves were informed. It matters little whether the employees' source was the grapevine or an overheard scrap of conversation. There is nothing which can more quickly destroy or impair a supervisor's feelings of leadership than to find that his people are better, or sooner, informed about management matters than he is. Ideally, to prevent this, there should be careful dissemination of management information down the management pyramid—with no level being given the information before a higher level has been informed. This particularly applies to major changes in the organization or its activities. In lesser degree it is true of minor management decisions.

Supervisor's "Split Personality"

It may seem that I am treating too seriously this business of loss of stature by the supervisor. In my judgment, the individual supervisor's standing must be sustained perpetually. Otherwise it is inconsistent to keep telling supervisors that they are "members of the management team" and that we expect them to devote their loyalties to the company. A supervisor who has to endure the split personality that re-

sults from being told he is a management man, on the one hand, and then in practice not being treated as such, cannot be expected to be an undivided person when we need his total efforts to help us in tight situations. We of management resented it when the "court" told us that foremen and supervisors were merely the traffic cops of industry. We should not, in practice, make them so through our thoughtlessness.

Once a company has committed itself to the philosophy that its communication efforts depend intimately on the communication skill of its supervisors, we can be certain that the "formal" communication programs have a good chance of success. One reason is that the house newspapers, the manuals, the bulletins, will be read by an audience of employees who are more receptive to what top management has to say, because they have been affirmatively conditioned by the front-line branch of management. They are more prepared to accept management's published professions of good will, because they have seen it in living example every day. Where supervision has been skillfully building sound human relations in the daily work, through good face-to-face communications, it will be almost impossible for the published material not to be enthusiastically received.

I recognize that this seems to be the hard way to communicate. It seems so much easier to call in a consultant and ask him to set up a slick communications "program." It is easier—no question about it! It is also fairly simple—and inexpensive—to find some talented young person in your organization who can turn out an acceptable house paper. But these will be like "the seed on the rock" in the Bible, if your supervisors haven't developed positive attitudes among your rank and file. Yes, making supervision the basis of your employee communications is indeed the long, hard way. But it is the only permanent way—the only truly effective way.

And it is so rewarding to succeed in industrial communications. There is such a story to tell of the contributions of American business. There is so much that can be gained by having employees "identify"—as the expression has it—by having them recognize the mutual interdependence of employer and employee. Without such recognition by an employee, we cannot count on getting more than a small piece of his potential energy and interest in his job. We of management who have been successful in our administration of the materials, the money, the machines, the marketing of American products and services, have only in recent years risen to the challenges presented by employee administration. We seem to be on our way toward success in personnel management now, mainly because we have devoted our management skill to improving communications with the people who put top management's plans into execution. But, as in all areas of American business, we shall always find room for further improvement. This is so because there will always be new ideas to communicate, and we shall be continually seeking new, exciting means of communicating them. These new means of communication which management is sure to develop will, of course, have to keep pace with business progress, and we can expect they will be novel and dramatic. But they cannot be effective by themselves. Their success or failure will always depend on how well management has been communicating face-to-face on the job each day. And we have seen that the face-to-face communicator for management is the supervisor. He alone offers the key to effective communication. As we improve his techniques, we will improve our employee communications. And, as we improve communications, we enlarge our opportunities for greater employee contributions to business progress. * *

Materials Handling

CORRECTION:

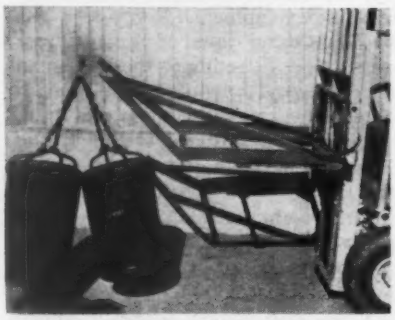
The illustration accompanying the "Materials Handling" report on page 27 of the August issue, obviously should have accompanied a report from Consolidated Edison Company of New York, rather than that of the fork-lift extension arm developed by Southern Counties Gas Company.

Consolidated Edison Company of New York, Inc., has adapted a battery-operated vehicle to its stores requirements for personnel and material transportation. Thomas S. Dunstan, general stores manager, reports to purchasing and stores committee of American Gas Association that it is used for loads to ¼-T and is "particularly suitable for quick pick-up of small quantities of materials." It also facilitates the movement of supervisory personnel.

The little truck is 38-in. wide by 92-in. long, and seats 2 riders. The body is of steel construction. It is equipped with 4 heavy-duty batteries; a portable 120-v charger connects with standard wall receptacles.

The truck is manufactured by Autoette, Inc., 730 W. Esther, Long Beach 13, California.

Fork-Lift Extension Arm



This special fork-lift extension arm, for 4000-lb lift trucks, was designed, developed and constructed by Southern Counties Gas Company, for handling drums, large valves and similarly heavy and bulky pieces.

The fork-lift extension arm is constructed from standard shapes and is designed for 1500-lb loads.

AMA Reports On Salaries

Engineers and other professional employees in American industry now are earning about 4.5 per cent more than they earned last year, according to a survey of compensation paid to administrative and technical personnel just completed by the executive compensation service of the American Management Association. The majority of the companies surveyed reported granting salary increases to individuals in this group during the past year.

Considering the great demand for and short supply of professional personnel, the range of salaries reported in the survey is surprisingly narrow, the AMA report says. The average beginning engineer receives about $4500 a year. Median pay for industrial engineering positions is approximately $6000 annually; for chemical positions, $6500, and for electrical and mechanical engineering, $7000.

Technical and professional employees are less likely to receive bonuses in addition to their salaries than are foremen and middle-management personnel. Only a fifth of the individuals included in the new survey received bonuses this year, as compared to a fourth of the foremen and two-fifths of the middle-mangement executives.

Gas Industry Set for

The Enthusiastic Invasion of California

F. M. Banks
Pres., AGA

E. D. Sherwin
Pres., PCGA

R. R. Blackburn
Convention Chairman

R. A. Hornby
Program Chairman

D. H. Mitchell
Pres., Nomine, AGA

C. H. Zachry
1st V-P Nominee, AGA

A. W. Conover
2nd V-P Nominee, AGA

V. L. Miles
Treas. Nominee, AGA

G. W. Wadsworth
Pres. Nominee, PCGA

T. T. Arden
V-P Nominee, PCGA

J. F. Ray
Gen. Ch., Mfg. Sec.

Clifford Johnstone
Mg. Dir., PCGA

AGA-PCGA convention will draw largest crowd in history

● When Presidents F. M. Banks and E. D. Sherwin bang their respective gavels in Los Angeles next month, the largest single gathering of the gas industry's history will be under way. Estimates of attendance at the combined American Gas Association-Pacific Gas Association convention are in the area of 4000.

An impressive roster of nationally prominent speakers has been assembled to address the general sessions meetings of the American Gas Association—Pacific Coast Gas Association Convention in Los Angeles, October 17-19, according to Program Chairman Robert A. Hornby, executive vice president of the Pacific Lighting Corporation. Hornby reports he has firm commitments from an outstanding group of leaders in fields of education, banking, industry, religion, and government, each to deliver an address on his specialty.

Among the scheduled speakers are: Norris Poulson, Mayor of Los Angeles and former Congressman, who will welcome delegates. J. Ed Warren, vice president of the First National City Bank of New York, who will speak on "Whats and Wheres of Our Energy Needs and Supplies," Thomas T. Arden, president of Gas Appliance Manufacturers Association, and executive vice president, Robertshaw-Fulton Controls Company, will report on "The 'New Look' at Gas Appliances (with *no* apologies to Mr. Dior)".

Lawrence C. Lockley, Dean, School of Commerce, University of Southern California, will discuss "Future Buying Habits of the American Public." John F. Merriam, president, Independent Natural Gas Association of America, and president, Northern Natural Gas Company, will talk on "The Natural Gas Industry."

Dr. James W. Fifield, Jr., pastor of the First Congregational Church of Los Angeles, will address the joint PCGA-AGA luncheon closing the convention on the subject "False Gods."

F. M. Banks, president, Southern California Gas Company, and presi-

dent, AGA, will preside at the general sessions to be held Monday, Tuesday, and Wednesday mornings at the Pacific Ballroom in the Hotel Statler. On Monday the program will include a report by Vincent T. Miles, Long Island Lighting Company, and treasurer of AGA, and the president's address to be given by Banks.

Everett J. Boothby, president, Washington Gas Light Company, will submit the slate of officers and directors named by the nominating committee, which he heads, and officers for the 1956 association year will be elected.

On Tuesday morning, President Banks will make presentations of awards to the winners of the AGA Distinguished Service Award, the AGA Distribution Achievement Award, the Home Service Achievement Awards, and the Beal Medal Award.

Disneyland

A trip to Disneyland—fabulous new entertainment center—will attract most of the 3000 delegates on the evening of October 18, according to Frank Seitz, Southern Counties Gas Company, chairman of the entertainment committee. A gigantic western barbecue is to be staged for delegates at the Anaheim playground. This is only one part of the relaxation and recreational program being arranged for delegates and their wives. On Monday afternoon, the ladies can shop or tour Hollywood by bus. The traditional president's reception is scheduled for Monday evening. On Tuesday there will be a ladies luncheon and style show staged at the Moulin Rouge. The facilities of two top golf courses, Riviera Country Club and Oakmont Country Club will be available. Golfers may register individually or for foursomes at the Ambassador, Statler, and Biltmore Hotels. No tournament has been planned and individuals will be grouped in foursomes.

The General Convention Committee, headed by R. R. Blackburn, vice president, Southern California Gas Company, and the registration committee, headed by George Coates, of the Southern Counties Gas Company of California, urge advance registrations be made on the forms mailed to all members of AGA and PCGA.

The Honolulu Gas Company is joining with the Hawaii Visitors Bureau in plans for a most attractive post-convention trip. All delegates holding advance hotel reservations will receive invitations and brochures. The company is making plans for extending the renowned hospitality of the Hawaiian Islands to visiting delegates.

There will be a registration fee of $20 for delegates and $10 for ladies accompanying delegates. Registration fees include admission to all sessions and social functions of the convention. Badges will be required for admission to all meetings and recreation events and will be issued at the Registration Desks.

Section Programs

Section programs for the convention have taken final shape and hold promise of interest for all delegates. The General Management Section will have a luncheon and afternoon session in the Golden State Room at the Hotel Statler on Monday, October 17. The Corporate Secretaries Committee will hold an open business meeting at 2:00 p.m. Tuesday, October 18, in the Los Angeles Room at the Statler.

The General Management Section program features three speakers. At the 12:30 p.m. luncheon, Jesse W. Tapp, chairman of the board of the Bank of America, will discuss his bank's approach to business problems and its relation to the business development of an area. In the afternoon session, Emmett J. Leahy, of New York, will talk on Paperwork Management. Leahy was head of the Paperwork Management Task Force of the recent Hoover Commission. Closing speaker will be Guy Corfield, research engineer, Southern California Gas Company. He will report on the gas industry's part in the recent atomic tests, where he served as project engineer. George L. Harding, president, American Society of Corporate Secretaries, Inc., will lead a round-table discussion of Corporate Secretaries' problems and methods at the Tuesday, October 18th, meeting.

The Accounting Section will hold two sessions in the Statler Hotel. On Monday afternoon, October 17, the first session will convene in the Los Angeles Room, with Austin T. Gardner, Delaware Power and Light Company, presiding as section chairman. Welcome to delegates will be extended by J. L. Liecty, Arizona Public Service Company, chairman, PCGA Accounting Section.

J. E. Hobson, director, Stamford Research Institute, Menlo Park, California, will present a paper on "Operations Research." The second speaker on Monday is R. H. Johnson, general auditor, The Brooklyn Union Gas Company, and chairman AGA General Accounting Committee. He will discuss cost control under the heading: "Are You Really Managing Costs." The report of the nominating committee, headed by Paul E. Ewers, Michigan Consolidated Gas Company, will be submitted and Section members will elect officers for the coming year. The session will be concluded by a talk presented by J. C. Messer, The Peoples Gas Light and Coke Company, Chicago. As chairman of the subcommittee on electronic accounting developments, he will talk on measuring problems of today and tomorrow in electronics.

D. W. Peterson, Minneapolis Gas Company, and AGA coordinator, General Activities Group, will serve as chairman at the Tuesday luncheon meeting starting at 12:30 in the Sierra Room of the Statler.

Accounting Merit Award

Three members of the section will be given the Accounting Merit Award by AGA President F. M. Banks at this meeting. Chairman A. T. Gardner will present a report of the major accomplishments of the Accounting Section during the past year. Gilbert J. Williams, executive vice president, Connecticut Light and Power Company, will discuss employee relations in the utility industry. A panel of experts headed by J. Stanley Green, Southern California Gas Company, will discuss "Internal Auditing in Relation to Methods and Procedures." The final paper of the session will deal with "Accelerated Depreciation," and will be presented by R. A. Rosan, Columbia Gas System Service Corporation, New York, a member of the AGA depreciation accounting committee.

Employing a different pattern this year, the Industrial and Commercial Gas Section will initiate its program at a joint luncheon with the Residential Gas Section on Monday, October 17, in the Cocoanut Grove of the Ambassador Hotel. Ray Trowbridge, Seattle Gas Company, and Walter H. Kurdelski, Michigan Consolidated Gas Company, chairmen of the respective sections, will preside at this luncheon.

The program has been streamlined to expedite meetings of the individual sections. C. S. Stackpole, managing director of AGA will welcome delegates, and will introduce Mrs. America of 1956, Mrs. Ramona Deitemeyer, of Lincoln, Nebraska. He also will introduce C. H. Zachry, president, Southern Union Gas Company, Dallas, and vice president, AGA. Zachry who is chairman of the PAR committee of AGA, will present the main luncheon address.

The section's program and papers committee under Walter S. Anderson, Boston Consolidated Gas Company, prepared a company program covering important phases of industrial and commercial selling for the afternoon meeting in the ball room of the Ambassador Hotel.

F. D. Campbell, president, New England Gas and Electric Association, Cambridge, Massachusetts, will discuss the timely subject of the effect of atomic energy utilization on the industrial fuel industry. Campbell is chairman of the AGA atomic energy com-

mittee.

R. D. MacMahon, Southern California Gas Company, will tell delegates how his company has achieved years of success in merchandising industrial and commercial gas in a talk "Integrating Local Sales with National Sales." Views of an advertising agency executive on sales will continue MacMahon's theme. Tyler McDonald, vice president, Hixsen Jorgenson Company, will speak on dynamic selling.

Ray Trowbridge, section chairman, will present the annual report of the section briefly in a paper "What's the Answer." Closing the section session will be the election of officers for the next association year.

The Operating Section will hold afternoon sessions on Monday and Tuesday in the Biltmore Hotel, which will serve as headquarters for operating personnel. Walter H. Davidson, Transcontinental Gas Pipe Line Corporation, will preside as chairman of the section at the first session. Tuesday's session will be headed by J. H. Collins, Sr., New Orleans Public Service, Inc., section chairman-nominee. In addition to the conduct of section business, three papers of broad technical interest will be presented on Monday and four on Tuesday.

Following the report of the section chairman on Monday, the first paper will be presented by E. J. McConnell, Stone and Webster Service Corporation, on the economics of gas distribution. Quality control as a supervisory tool will be discussed by G. J. Sandusky, Southern California Gas Company. E. M. DeMouche, Houston Pipe Line Company, will speak on the application of telemetering and remote control to gas dispatching.

Nominating Committee Report

On Tuesday, the report of the nominating committee will be read and section members will elect the 1956 officers. Chairmen of the section's 1955 committees then will be recognized.

The first paper will be presented by Karl B. Nagler, The Peoples Gas Light and Coke Company. He will talk on management's responsibility for safety. C. E. Loomis, Columbia Gas System Service Corporation, will draw on the experience of his company to tell of the advantage of underground storage in the operation of a gas utility.

J. N. Landis and Frederic A. Hough, Bechtel Corporation, are joint authors of a paper on the role of engineering in the gas industry. The session will conclude with a paper outlining what the corrosion engineer can do for management by Guy Corfield, of Southern California Gas Company.

The Residential Gas Section meeting on Tuesday afternoon will be a streamlined, high speed session, bringing gas men an array of up-to-the-minute subjects to be discussed by top-ranking executives. Chairman Walter H. Kurdelski will open the meeting with a welcome to delegates. After a report from the nominating committee, sections members will elect officers for the coming year.

Chairman Kurdelski will present a report on section activities for the past year. Then L. L. Baxter, president, Arkansas Western Gas Company, Fayetteville, Arkansas, will discuss the progress and development of the gas industry in a provocative talk: "Forward Is the Buy-Word." He will review AGA sales and promotional activities on behalf of gas utility companies and offer his ideas and recommendations on steps the industry can take to maintain and increase its competitive position in the residential field.

Well known Broadway and TV talent will be featured in "A Tale of Two Kitchens," a new Eastman color movie, produced in cooperation with *Woman's Home Companion*. The film presents a complete story on planning a gas kitchen and laundry and features two outstanding New Freedom Gas Kitchens and Laundries.

Duncan C. Menzies, president, Servel Inc., in a presentation: "To The Victors," will donate awards to the gas utility companies that have done the best selling job on gas refrigerators in a five-month campaign, sponsored jointly by AGA and Servel.

Gas sales personnel will be interested in a talk given by J. Theodore Wolfe, executive vice president, Baltimore Gas and Electric Company. Wolfe is chairman of the AGA gas industry development committee, and he will discuss objectives and results of this important campaign, including some fine results from the Ten Demonstration City Programs.

Two motion pictures in color will be shown which would be of great interest and importance to those in attendance. First will be a premier showing of a film entitled: "Challenge Accepted," and produced by The Coleman Company, Inc., Wichita, Kansas. All year gas air conditioning, a most important and fast-growing gas service, is the subject of this film. In a similar category is the film "Hey, Charlie" which presents New York Consolidated Edison's amusing approach to the sale of residential gas space heating.

Breakfast for Delegates

Katherine L. Rathbone, home service supervisor, Southern Counties Gas Company, chairman of the AGA home service committee, will preside at the home service breakfast, to be given in the Embassy Room of the Ambassador Hotel, at 8:00 a.m. Tuesday, October 18. Greetings to delegates will be extended by President F. M. Banks and Managing Director C. S. Stackpole. Following these messages of welcome, a dramatic presentation, "Operation Womanpower" will be presented by a cast from the Southern California Gas Company and moderated by Gladys B. Price, home service supervisor of Southern California Gas Company. This skit was a popular feature at a recent meeting of the Sales Executives Club in Los Angeles.

On Tuesday afternoon the Home Service Round Table will be held in the Renaissance Room at the Biltmore Hotel. Two magazine editors, who are sponsoring New Freedom Gas Kitchens on display during the convention, will participate in this program. Mrs. Maxine Livingston of *Parents Magazine* will discuss the subject "The Home Laundry — the New Area of Family Activities." A talk on "Kitchen News" will be given by Mrs. Elizabeth Sweeney Herbert of *McCall's Magazine*.

Two home service subjects will be presented by members of the Home Service Department of the Southern Counties Gas Company. Katherine Davis will moderate a panel "Junior Home Economists Look at Business." She will be assisted in this by Dr. Gladys Stevenson, head of the Home Economics Department of Whittier College, and Janet Smith, a student. Study and research on a new feature of gas ranges, will be discussed by Shirley Brua, home service dietian with a subject: "Rotisseries Are Worth a Second Look." Home Service meetings, the breakfast and round-table discussions are open to all convention delegates.

AGA Nominates Officers

Following are gas executives selected by the general nominating committee of American Gas Association:

President: Dean H. Mitchell, president, Northern Indiana Public Service Company.

First vice president: C. H. Zachry, president, Southern Union Gas Company.

Second vice president: A. W. Conover, president, Equitable Gas Company.

Treasurer: Vincent T. Miles, treasurer, Long Island Lighting Company.

Gas Industry STATISTICS

Price Indexes: Gas, Other Fuels and Electricity

(1947-1949 = 100.0) Source: Bureau of Labor Statistics, U. S. Department of Labor

	1955						1954							
	June	May	Apr.	Mar.	Feb.	Jan.	Dec.	Nov.	Oct.	Sept.	Aug.	July	June	Jan.
GAS														
Space heating	121.2	121.5	119.5	119.6	119.2	117.3	116.4	115.7	115.5	114.6	114.5	114.4	114.3	113.6
Non-space heating	112.2	112.7	112.2	112.2	111.3	111.1	110.6	109.8	109.7	108.8	108.8	108.9	108.8	108.8
Natural														
10 therms	100.6	102.1	101.7	101.5	101.4	101.0	100.9	100.6	100.5	99.4	99.5	99.9	99.7	100.0
25 therms	116.6	117.1	116.2	116.3	116.1	115.8	114.8	113.9	113.7	112.3	112.2	112.5	112.3	112.2
Manufactured														
10 therms	111.8	111.7	111.5	111.5	111.2	111.2	111.1	109.5	109.5	109.5	109.4	109.2	109.4	109.4
25 therms	111.3	111.1	110.8	110.8	110.6	110.6	110.5	110.3	110.3	110.2	109.4	109.6	109.6	109.6
Mixed														
10 therms	105.2	105.2	105.2	105.2	96.4	96.4	96.4	96.4	96.4	96.4	96.4	96.4	96.4	96.4
25 therms	102.2	102.2	102.2	102.2	100.4	100.4	100.4	100.4	100.4	100.4	100.4	100.4	100.4	100.4
All types combined														
10 therms	108.0	108.7	108.5	108.3	106.6	106.4	106.3	105.6	105.6	105.0	105.1	105.2	105.2	105.3
25 therms	116.4	116.8	116.1	116.1	115.8	115.5	114.7	113.9	113.8	112.7	112.6	112.7	112.6	112.5
ELECTRICITY														
Composite	106.2	106.2	105.8	105.8	105.8	105.5	105.5	105.2	104.9	104.8	104.8	104.8	104.5	103.8
SOLID FUELS														
Bituminous—All sizes	118.1	117.8	119.6	120.4	120.4	120.4	120.2	119.9	119.4	118.7	117.9	117.4	117.2	120.7
Anthracite—All sizes	120.5	120.3	129.6	131.2	131.2	130.9	129.2	128.5	126.5	126.4	124.7	124.1	124.1	135.0
PETROLEUM														
Fuel oil No. 2	122.9	122.9	125.1	125.0	125.0	125.0	124.2	121.0	121.0	118.8	118.5	117.7	117.7	121.9

Sales Indexes: Gas and Electricity

To ultimate consumers

Seasonally adjusted (1947-1949 = 100.0) Sources: American Gas Association and Edison Electric Institute

	1955								1954						1953
	July	June	May	April	Mar.	Feb.	Jan.	Dec.	Nov.	Oct.	Sept.	Aug.	July	Jan.	Jan.
Gas	193.6	191.5	188.2	195.5	212.5	216.9	206.0	198.3	195.7	190.0	171.7	178.8	180.6	194.8	172.9
Electricity	201.1	194.6	192.5	190.2	187.1	184.0	180.1	178.7	175.9	175.9	173.1	175.6	177.7	161.5	147.9

Shipments: Residential Appliances

(000 units) Source: Gas Appliance Manufacturers Association

	1955						1954								
	July	June	May	April	Mar.	Feb.	Jan.	Dec.	Nov.	Oct.	Sept.	Aug.	July	June	Jan.
Ranges	149.5*	196.5*	187.4												
Gas	—	120.1	124.9	182.3	217.3	186.2	152.9	145.7	174.0	197.1	203.9	179.4	134.5	174.3	137.0
Electric				124.1	148.8	145.4	156.2	97.2	90.7	96.4	113.8	86.8	91.4	98.1	116.4
Water heaters	212.5*	227.1	229.4												
Gas	—	92.7	83.5	245.2	263.1	214.7	200.0	166.8	179.1	202.0	205.5	207.1	190.3	206.7	164.4
Electric				76.9	84.9	75.4	62.4	49.4	57.1	63.7	80.4	66.6	73.0	69.8	53.9
Furnaces, gas	67.8*	73.3*	60.9	58.0	53.7	47.7	50.3	64.3	79.0	82.0	75.4	53.1	57.3	57.3	31.0
Boilers, gas	7.4*	7.1	5.6	4.9	5.0	3.7	Note †	7.0	10.8	10.9	8.9	6.0	6.2	6.2	2.9
Conversion burners	13.3	16.0	12.3	9.5	7.4	6.4	5.2	9.2	16.0	32.2	35.9	29.4	19.9	19.7	8.8

* Preliminary totals. † GAMA is reevaluating all 1954 data on boilers.

Index of Yields: Selected Utilities Stocks

Expressed as percentages

	1955					1954								1953
	Aug.	July	June	May	April	Mar.	Feb.	Jan.	Dec.	Nov.	Oct.	Sept.	July	Jan.	Jan.
Transmission companies	4.19	4.04	4.24	4.13	4.04	3.94	4.01	4.25	4.27	4.40	4.40	4.17	4.25	4.21	4.04
Transm. and distrib. companies	4.81	4.80	4.83	4.78	4.80	4.91	4.87	5.00	5.08	4.69	4.70	4.61	4.88	5.39	5.02
Manuf'd mixed companies	4.75	4.71	4.71	4.79	4.71	4.72	4.48	4.57	4.88	4.72	4.38	4.16	4.36	4.66	4.87
Class "A" electric companies	4.27	4.21	4.38	4.34	4.25	4.36	4.07	4.13	4.20	4.37	4.46	4.36	4.31	4.92	5.08
Class "B" electric companies	4.49	4.43	4.62	4.63	4.57	4.60	4.55	4.68	4.72	4.69	4.77	4.74	4.78	5.14	5.19

This is a straight arithmetical index of comparative yields obtainable on selected gas and electric utility common stocks. The companies comprising this index were selected by AMERICAN GAS JOURNAL as providing a cross-section of each industry. No effort has been made to weight the average to give effect to changes in capitalization or in dividend rates because yields afforded on issues reflect such changes. The index is designed to show rate of return and not necessarily market movements of stocks comprising it. Index is compiled from: transmission companies, 5; transmission and distribution companies, 5; manufactured and mixed gas companies, 4; class "A" electric companies, 4; class "B" electric companies 5.

Tighter Federal Curb on Credit May Affect Long-Term Fund Demand

John F. Falvey
Financial Editor

● A principal development of recent weeks has been the tightening curbs placed on credit by the Federal Government and the Federal Reserve Banks.

A decline in the number of new housing starts has resulted from the government's action in raising down payments on new homes and in shortening maturities on Federal Housing Administration and Veterans' Administration home mortgages.

In July of this year housing starts dropped to an annual rate of 1,200,000 units, for a decline of approximately 14 per cent from the 1,400,000 annual rate in evidence last January.

An immediate outgrowth of this development is expected to be a contraction in the demand for long-term funds. In the first quarter of this year, home financing increased by an estimated $3 billion. Competent authorities lean to the belief that the lower number of housing starts conceivably might hold the rise in home mortgages to a maximum of $10 billion annually, against $12 billion annually at which home mortgages were running prior to the recent precautionary steps taken by the FHA and VA.

In companion steps the majority of the nation's largest commercial banks have increased the prime commercial interest rate from 3 to 3¼ per cent, and the Federal Reserve Banks have upped the rediscount rate generally to 2 per cent, with the possibility that eventually they may go a step further and duplicate the 2¼ per cent rate prevailing in the Cleveland district.

According to figures recently released by the Institute of Life Insurance, the country's life firms in the first six months of 1955 loaned a record $3.1 billion on real estate mortgages. This was an increase of 35 per cent above the amount loaned for the purpose in the first half of 1954.

This outlay brought total mortgage investments of the life firms to $27,483,000,000 at June 30, 1955, for a gain of nearly $21 billion since the end of World War II.

And commitments already made for additional mortgage financing for the balance of this year indicate that more than $6 billion of such loans will be made in 1955, the Institute estimates.

Reflecting the tighter money situation that has been in evidence for some time past, the yield on first grade corporate bonds increased by seven basis points in the last four weeks alone. This compares with the increase of 15 basis points recorded in the yield on these same issues in the seven months ended July 31 last.

Specific proof of the extent to which interest rates have hardened to date this year is shown in the experience of Pacific Telephone and Telegraph Company, which on August 23 sold $67 million of 36-year debentures at an interest cost of 3.53 per cent. This represents an increase of 46 basis points —15 per cent—over the 3.07 per cent basis on which it was able to sell $50 million of 35-year debentures in mid-November 1954.

Economists generally agree that further tightening in interest rates should be expected; but whereas some reason that the rising money cost will most likely come to an end this October lest the trend ruin the bond market, others are of the opinion that the advance will carry through this fall if no business downturn is witnessed.

The business outlook for the remainder of this year continues to be good and no serious decline is anticipated in 1956, according to economist William R. Biggs of the Bank of New York. Next year, he points out, is an election year and "the powerful potential weapon of tax reduction is always available." A leveling off in business activity does seem possible, however, and Biggs suggests keeping a close watch over the effects of tighter and higher cost credit on the housing, automobile and allied industries, as well as on plans for capital expenditures.

In some quarters the opinion is held that an increase in capital expenditures could be one of the factors offsetting continuance of the decline in residential building and the slowing up of automobile sales. In this connection some economists pose the question whether the hardening of interest rates and the greater difficulty of financing will markedly affect acpital expenditure programs. In the opinion of the Bank of New York economist, higher wage costs and rising demand may provide important incentives to capital expenditures, with the result that these incentives may be sufficient to limit the deterrent effect of tight money.

Business itself expects that conditions in the final six months of this year will be equally as good, if not better than they were in the opening six months. Merely maintaining the status quo would be quite a feat, considering that national output and gross national product hit new all-time high levels in the June quarter.

A note of caution was present, however, in the consensus of 131 manufacturing concerns surveyed by the National Industrial Conference Board in its effort to appraise the outlook for business in the final half of 1955. Approximately one-third of the concerns interviewed expect new orders to decline, better than half think that dollar billings will be no higher or might possibly be lower, and nearly half of the companies predict either no change or a slight decline in the rate of production, compared with first six months' figures.

Equaling the surge in production and in national income has been a piling up of individual debts to the highest point in history. Viewing the whole economic picture on balance, economists believe that extra sales efforts will be required to maintain the economy as industrial output at last report was running 14 per cent ahead of a year ago, whereas retail sales were up by only about 6 per cent and total bank clearings were just about equal to last year's level.

The economists pose two questions: Can product markets stand higher prices, and can credit markets stand higher money rates? Wage hikes are spreading and higher wages are forcing up industrial costs and prices in the face of receding farm income and a leveling off in demands for new homes and automobiles.

To compound the situation somewhat, the big corporate borrowing, which is necessary, is being effected at sharply rising interest cost. In the absence of accurate information as to how far the government authorities will go in supporting commodity markets through stockpiling and other support steps, and as to how far the policy of credit tightening will be carried, considerable uncertainty exists in the security markets. This is evidenced in the experience of the stock market, where price advances recently have been outnumbering declines by only a modest margin.

← INDEX OF YIELDS SELECTION UTILITIES STOCKS

AMERICAN Gas Journal FEATURE

Courts Have Handed Down Varying Decisions on Utility-Extension Demands

By Leo T. Parker
Attorney at Law

An official of a gas corporation in a small city asks these questions: "What duty has a gas corporation to keep city streets level and safe for automobile travel after a ditch has been dug for installation of a gas main? If city employees attempt to keep the street level and in good condition is the gas corporation relieved from liability for injuries sustained by occupants of an automobile that runs into a valley or depression resulting from the excavation?"

A few weeks ago a higher court rendered an important decision that answers these legal questions.

In Oklahoma Natural Gas Company v. Hancock, 272 Pac. (2d) 450, the testimony showed facts, as follows: Employees of the Oklahoma Natural Gas Company excavated a ditch across a street; laid a gas pipe therein and filled the ditch with dry dirt to the level of the street surface. Later the city dragged or graded the street across the line of the covered ditch. Throughout January there were intermittent heavy rainfalls and snowfall. In January and February there was snow on the ground in the area and some days the temperature was sub-freezing. A depression was allowed to remain in the street where the ditch had been filled with dirt.

One day in February Mr. Hancock and his wife were riding in an automobile driven by Hancock. The automobile struck the depression and severe personal injuries were sustained by Hancock and his wife. Hancock sued the Oklahoma Natural Gas Company for heavy damages.

During the trial Hancock testified that he did not see the depression until after the accident, but that it wrecked his car. In holding the gas corporation liable in damages to Hancock, the higher court said:

"The proofs justify the conclusion that defendant (Oklahoma Natural Gas Company) filled the ditch in such manner that with the coming of the winter rains and snow and alternate freezing and thaws there was created a subsidence or depression in the street that was the cause of the plaintiff's (Hancock's) injuries. Admittedly, the work was done for the sole use and benefit of the defendant (gas corporation) in connection with its business of distributing gas. It follows that the defendant may be held responsible for negligent injury thereby caused. Herein, by whatever right or authority the ditch was dug by the defendant, it appears that the work done for the sole use and benefit of the defendant, and that the work was an interference with the public use of the street and was in derogation of the right of the public to a use of the street for travel. It follows that there was a duty upon the defendant to restore the street to its normal condition and to take care of its work in so far as the public rights are concerned until such restoration was permanent."

With respect to the gas corporation's legal counsel's argument that the gas corporation could not be held liable because the city employees had attempted to fill in the depression, the higher court said:

"It is argued that once the defendant (gas corporation) had filled its ditch to the level of the street surface and the city had thereafter commenced the maintenance of the street, the defendant was charged no further responsibility; that the duty of taking care of any subsidence which should afterward occur rested upon the city. The fact that the city was under a duty to maintain the street in a reasonably safe condition for travel and accepted the defendant's (gas corporation's) work in the street does not exempt the defendant from the duty it had to take proper precautions in its work to prevent injury to persons thereafter using the street. As affecting the injured plaintiffs, the negligence, if any, of the defendant was not deprived of its character as legal cause by the mere failure of a third party to counteract its tendencies. Any neglect of the city in caring for a situation left by the defendant was not an intervening cause such as to relieve the defendant of liability for its negligence."

Also, this court clearly held that once a gas corporation disturbs the surface of a street, it has a legal duty to keep the street in good and safe condition, without regard to ordinary intervening causes of a dangerous condition and, also, irrespective of state laws which require municipalities to keep streets in good and safe condition. See City v. Wells, 191 P. 186, which upheld this latter law.

For further comparison see the leading case of Robinson v. Davis, 43 P. (2d) 754. In this case a gas corporation was charged with negligence in the leaving of an unfilled gas pipe ditch across a county highway. In holding the gas corporation liable for resultant injuries, the higher court said:

"We are of the opinion that a duty to maintain the highway rests upon the board of county commissioners and the county engineer, but that a duty likewise rests upon the owner or operator of a pipe line crossing a public highway to maintain it in such a condition that said highway may be traveled with safety by the public. The fact that a gas company is given permission to lay its line in a street or highway does not exempt it from the duty to take proper precautions to prevent injuries to persons using such highway."

And again, see City v. Deason, 196 P. 544. This court stated important law, as follows:

"In the nature of things, in the addition of water to loose dry dirt in a ditch, a subsidence is to be expected, and likewise rainfall is a normal expectance. Herein, without doubt, the defendant (gas corporation) was under a duty to put the street in as good condition as it had previously been and to exercise a reasonable foresight so to prevent any injury afterward which might be occasioned to the work by rainfall and snow and which would render the work dangerous to persons traveling on the street."

Must Prove Negligence

Modern higher courts consistently hold that a gas company is not liable for an injury caused by a defective street or sidewalk, unless it is proved conclusively that the defect was of such character and location that the gas company officials were negligent in failing to repair the defect, thing or accessory resulting in a dangerous street condition. Moreover, the court may imply negligence on the part of the officials or employees of a gas company, who fail to exercise care to discover and remedy a defect.

Old Days Recalled . . . from

AMERICAN GAS JOURNAL

EST. 1859

90 YEARS AGO

SEPTEMBER 1865

Advertisement: The Aubin Gas-Works Company of Albany, N. Y., now contract their works to make 10,000 feet of good Gas from 2,000 pounds of hard wood and 40 gallons of kersosene tar, before payment can be demanded; and the charcoal is worth the cost of the wood. Many Village Gas Companies can be referred to.

A company is being formed in Paris to manufacture oxygen. The use to which the oxygen is to be applied is that of economizing the consumption of coal gas for lighting purposes. The company intend to lay down pipe side by side with the existing gas mains, and from those mains to carry pipes into the houses or workshops of those consumers of ordinary gas who may be willing to avail themselves of the economy to be obtained by burning it in pure oxygen instead of in atmospheric air.

Heating by gas has already become immensely developed in England, Russia and in Paris; laboratories, kitchens, stores, apartments, are all heated by gas. Numerous styles of apparatus have been proposed for this purpose; some are excellent and some are without value.

A new Gas Apparatus. This invention consists in a novel apparatus for manufacturing carbureted hydrogen gas from coal or rock oil, which is more particularly adapted for use in dwelling houses, and which may also be used for warming purposes. The patentee of this apparatus is Owen Collins, of New York City.

Inspectors of gas works. The benefit which small Gas Companies would derive in having an occasional inspection of their works by a competent Engineer, would fully compensate for the expense which an inspection would involve, and we are of the opinion that if this plan was more universally adopted, a great saving would result. . . . While a practical and intelligent man may manage works which are in order, yet the moment anything is wrong they cannot correct it to advantage, and patch up time after time, until the whole apparatus becomes materially injured, when by timely advice from a competent Engineer, such results could always be avoided.

There are but few scientific and experienced Gas Engineers in the United States, compared with the number of Gas Works, hence these are secured and monopolized in especial positions.

50 YEARS AGO

SEPTEMBER 1930

Coke Oven Operation and Maintenance was the subject of the lead article by F. J. Pfluke, Rochester Gas & Electric Corporation.

The cooking load has diminished in the year 1930, in natural gas territory, to a point approximately 350 to 450 cubic feet per month per person and is still on the decline. To meet this startling reduction in our cooking revenue, we have a most effective weapon in gas refrigeration, which uses approximately 900 cubic feet of natural gas per month. . . . Refrigeration Committee, The Pacific Gas Assn., 1930.

Manufactured gas sales show gain for first six months.

Speaking of home heating and such provokes the question, why not a big "Everybody for Gas Incineration" drive during Fire Prevention Week . . . ? Why not a home laundry drive by every gas company in the country in September . . . ?

Hugh Cuthrell, Manager, New Business Department, The Brooklyn Union Gas Company, issued a bulletin with amounts that would be paid for leads that were converted to sales within 60 days.

Milwaukee Gàs Light Co. moved into its new 20-story building, said R. B. Brown, president.

Burning a $15,000 mortgage removed the last indebtedness of American Gas Association's Laboratory in Cleveland.

Thomas R. Weymouth retired as president of the Oklahoma Natural Gas Corporation to become chairman of its board of directors. E. C. Deal will take over the office of president.

Frank L. Hallock has been promoted to Assistant to Col. O. H. Fogg, Vice-President in charge of Commercial Relations of the Consolidated Gas Company of New York.

Ruud Manufacturing Co., Pittsburgh, Pa., has issued a new manual for Home Service Directors, entitled "Hot Water in Home Call Contacts."

25 YEARS AGO

SEPTEMBER 1905

The University of Wisconsin has started a course in gas engineering, the first three years of which are identical with the chemical engineering course, the balance of this course will contain optional studies directly bearing on gas engineering.

Mayor Weaver of Philadelphia, Pa., favors the idea of the city purchasing the gas works at the end of the present lease, and to maintain the works itself. For that reason he is opposed to using up the city's borrowing capacity by making loans. And Philadelphia has tried municipal ownership of its gas plant before!

Mr. Frederick E. Gunnison, chairman of the newly organized New York State commission on gas and electricity, recently visited Boston, where he made a study of the procedure of the Massachusetts commission, on which the New York State commission is modelled.

The lamplighters of Boston have formed a union. Next!

Write to the General Gas Light Company, of Kalamazoo, Mich., for a copy of its handsomely illustrated folder, cataloguing seven styles of the Humphrey gas arc lamps that are being put to practical and increasing use by about every gas company in the country.

The whole of Kansas City, Mo., is now supplied with natural gas.

Leechburg, Pa., is to be lighted by electricity no more, for 5 years, at least. The borough council decided not to enter into another contract with the Leechburg Electric Light and Power Company, which has lighted the streets for the past 6 years. Instead, it entered into a 5-year contract for incandescent gas lights, at an annual saving, it is figured, of $300.

Apart from the world reputation that will perforce attach to President Theodore Roosevelt as the foremost and most progressive ruler of his day and from the tremendous prestige that the United States has, at the same time, attained among the Powers, the financial, industrial and commercial advantages that must come to this country as a direct result of the Russo-Japanese was no so happily ended, are far too great for easy measurement at the moment.

FPC REPORT

Panhandle Directed to Refund $38,000,000 Plus

Panhandle Eastern Pipe Line Company has been ordered by a hearing examiner to refund a total of $36,380,665, plus interest, to its wholesale natural gas customers for the period from February 20, 1952, through April 30, 1954, when a rate increase was in effect under bond. Panhandle supplies natural gas to approximately 50 wholesale customers in Kansas, Indiana, Missouri, Ohio, Illinois, and Michigan.

In a decision which is subject to Commission review, the examiner disallowed the rates which Panhandle actually collected during the 26-month period, resulting in revenues totaling $183,289,471. He ruled that rates which would have produced revenues in the amount of $146,908,806 are "fair and reasonable."

The rate refund case arose from an FPC opinion and order issued April 15, 1954, prescribing wholesale natural gas rates for Panhandle which, based on the test year 1952, reduced the amount of a proposed increase from $21,400,000 per year to $12,778,864. Although the new rates became effective May 1, 1954, the $21,400,000 increase had been in effect, subject to refund, since February 20, 1952.

In its April 15, 1954, opinion and order, FPC said it would not determine the disposition of the refund amounts until it had a chance to study the actual operating results throughout the entire refund period. The FPC subsequently reopened the record of the proceedings to determine the rates for the period from February 20, 1952, through April 30, 1954, and to determine the excess charges collected by Panhandle during that period, which should be refunded.

The presiding examiner Marsh rejected Panhandle's contention that it was entitled to 6½ per cent return during the refund period, even though the Commission had found that a 5¾ per cent return was adequate. The examiner said nothing had been presented which would justify a rate of return for the refund period different from that allowed by the Commission in its opinion.

In another ruling, the examiner found that Panhandle should be allowed to include, in its cost of service, increases in gas purchased prior to May 1, 1954, resulting from escalation clauses in purchase contracts. He found Panhandle should not be allowed to charge this entire amount to its jurisdictional customers, as it had proposed to do. Since there are a number of issues in dispute between Panhandle and the producers from which it buys gas, he conditioned his order to provide for ultimate recovery by the rate payer of any excess of that which Panhandle was allowed over that which it will be called upon to pay for gas under the escalation clause.

The decision also provides for future determinations of the amounts to which Panhandle's customers may be entitled by reason of savings on income tax payments which may accrue to the company resulting from deductions based upon payment of interest on the refunds which it will make.

Central Kentucky Natural May Acquire Frankfort Kentucky Natural

A certificate has been issued to Central Kentucky Natural Gas Company, a Columbia Gas System subsidiary, authorizing it to acquire and operate the pipe line facilities of Frankfort Kentucky Natural Gas Company, one of its wholesale customers.

The facilities include pipe line from the present terminus of Central Kentucky's existing line to Frankfort and laterals to Versailles and Midway, Kentucky. Central Kentucky also will acquire Frankfort's distribution system in Frankfort, Versailles, and Midway.

Under the acquisition plan, Frankfort will receive a maximum of 33,050 shares of Columbia's common stock in exchange for the facilities, and Central Kentucky will assume substantially all of Frankfort's liabilities.

Panhandle Decision Affirmed

The Commission has affirmed, with modifications, a decision by a presiding examiner dismissing proposals by Panhandle Eastern Pipe Line Company to reduce natural gas deliveries to Michigan Consolidated Gas Company and cut off service entirely to Gas Service Company.

New York-Richmond Gets Hinshaw Exemption

The Commission exempted New York and Richmond Gas Company from regulation under the Natural Gas Act pursuant to terms of the Hinshaw Amendment. FPC has now exempted fully or partially a total of 69 companies.

New York Natural Loop Okayed

The Commission issued a certificate to New York State Natural Gas Corporation, authorizing the construction and operation of approximately 21 miles of loop line of New York State Natural's existing line to a connection with Rochester Gas and Electric Corporation. The new facilities are estimated to cost $1,225,000.

Temporary Okay to Trunkline

A temporary authorization was granted to Trunkline Gas Company to construct 8 new compressor stations and 24 miles of pipe line on its transmission system in Texas, Louisiana, Mississippi, Tennessee, and Illinois.

The Commission withheld authority for Trunkline to operate the new facilities pending determination of the proper allocation of the additional sales capacity. The Commission said that its action in granting temporary authorization "is without prejudice to such disposition of the application for a certificate as the record may require." Total estimated cost of Trunkline's project is $17,686,000.

Trunkline said the new facilities would increase peak day capacity by 85 MMcf.

Producer not Permitted to Stop Sales to Northern Natural

A Commission presiding examiner filed a decision, subject to Commission review, denying J. M. Huber Corporation permission to abandon sale of natural gas to Northern Natural Gas Company, except for gas sold from one of 12 wells involved.

The examiner ruled that sales made by Huber from 11 of its 12 wells in Carson County, Texas, are subject to FPC jurisdiction.

Huber filed an application, under protest, for a certificate authorizing sale to Northern and submitted a rate schedule covering this sale. On the same date Huber also filed a notice requesting permission for abandonment of sale to Northern, and subsequently filed a pleading in which it alleged want of jurisdiction by FPC over proposed abandonment. Northern filed a complaint against Huber objecting to the proposed discontinuance of sale.

Huber contended FPC is without power to issue a certificate covering the deliveries to Northern inasmuch as Huber is unwilling to continue rendering service. The presiding examiner said the operations in question persisted over a period of years, "when the application for a certificate authorizing the service is finally filed to avoid continued violation of the Act, and further when there is filed concurrently an application for abandonment of the same service, unwillingness, which is a self-serving position, cannot be given controlling or any effect."

Huber claimed it has no facilities for making deliveries to Northern which are not also production or gathering facilities and thus exempt under the Natural Gas Act. The presiding examiner declared Huber's premise "is erroneous" since Huber has facilities for sale of gas to Northern which has no production or gathering function.

Gas Industry news

Mid-West Gas Association Announces Officer Change

Harold E. Peckham has resigned as secretary-treasurer of the association, after eight years in this office. Everett E. Baxter, Central Electric and Gas Company, Lincoln, Nebraska, has been elected by the executive council of the association to fill the unexpired portion of Peckham's term of office. Baxter is a past president of the association and has been active in affairs of the group for many years.

Peckham has been assigned to new duties as general superintendent of gas operations of Northern States Power Company, with headquarters in the general office in Minneapolis.

Three Bailey Meter Offices Move to Larger Quarters

The Atlanta, Dallas, and Memphis district offices of Bailey Meter Company have moved to larger quarters. The company, whose headquarters are in Cleveland, Ohio, manufactures industrial instruments and automatic controls for power and process industries.

The Atlanta office, under the managership of M. J. McWhorter, is now located at 1145 Peachtree Street, N.E., Room 3090, Atlanta 5, Georgia. The Dallas office, managed by F. D. Krusemark, has moved to 6615 Snider Plaza, Room 211, Dallas 5, Texas. Under the managership of R. E. Byers, the Memphis office's new address is 3355 Poplar Avenue, Memphis 11, Tennessee.

First Woman Graduate IGT

Although the Institute of Gas Technology restricts its undergraduate and graduate classes to men, Ida Belle Spinks is the only woman among 1081 enrollees to date in the Institute's home study course, "Natural Gas Production and Transmission." She has received the certificate of accomplishment awarded to all who satisfactorily complete the course. Mrs. Spinks, administrative secretary, United Gas Corporation, Houston, had taken a course in geology while at the University of Texas.

Draketown Reorganizes

Draketown (Canada), Ltd., has recently been organized in Calgary by Drake and Townsend, Inc. The new organization is a Canadian subsidiary of Drake and Townsend, Inc., with offices at 121 11th Ave. West, Calgary, Alta.

Marvin Chandler, president of Northern Illinois Gas Company, holds gilded meter installed in new Rolling Meadow's all-gas home of Mr. and Mrs. Norbert Karst (standing in doorway with one of their sons, Gary). The Karsts were the utility's 500,000th customer.

Home Meter Is 500,000 For Northern Illinois Gas

Installation of a gilded meter in July in the new all-gas home of Northern Illinois Gas Company's 500,000th customer in Rolling Meadows, Illinois, northwest of Chicago, has been announced.

Owners of the new home, Mr. and Mrs. Norbert Karst, who will receive their choice of gas appliances in recognition of the event, were congratulated by Marvin Chandler, president of Northern Illinois Gas, and others, including George R. Perrine, chairman of the Illinois Commerce Commission, and Mrs. Eda Zimmerman, Rolling Meadows' village clerk. The Karsts, who will move to their new all-gas residence in the near future, now reside in Chicago. Karst is a truck dispatcher for the Automatic Electric Company, Chicago, makers of telephone equipment.

Installation of meter number 500,000 climaxes a continuing Northern Illinois Gas Company growth attested by the approximately 120,000 new customers added to the system during the past five years.

PG&E Plans $24-Million Gas Import Project

Plans for a $24,000,000 enlargement of facilities to import more natural gas for customers of Pacific Gas and Electric Company were disclosed when the company filed an application with California Public Utilities Commission for authorization to begin the project.

Termed necessary to meet increasing needs of customers, the project would ultimately result in bringing an additional 225,000,000 cu ft a day into northern and central California from Texas and New Mexico fields. This would increase the PG&E's daily importation to 925,000,000 cu ft by January 1, 1959.

A series of paralleling sections, adjacent to the existing 502-mile "Super Inch" line between Topock, Arizona, and Milpitas, California, would virtually complete the construction of a second 34-in. line between those points; 283 miles of parallel line have been laid in projects which raised the "Super Inch" capacity from its original 400,000,000 cu ft a day to the present 700,000,000 cu ft. The project now before the commission would add 189.8 miles.

An agreement between PG&E and the El Paso Natural Gas Company calls for delivery of the first additional 50,000,000 cu ft by November 1, 1956.

Another 75,000,000 cu ft would be delivered starting November 1, 1957.

Research-Cottrell Announces Agents in Canada and Mexico

Research-Cottrell, Inc., Bound Brook, New Jersey, manufacturer of Cottrell Electrical Precipitators for industrial gas cleaning, has announced the appointment of Sheldons Engineering, Ltd., Galt, Ontario, as its sales representative in Canada.

It was also announced that Equipos de Proceso, S.A., Edificio International, Reforma 1-556, Mexico 1, D. F., will represent Research-Cottrell as sales representative in Mexico.

Gas-Fired Furnace Shipments Break Two Records In July

Shipments of gas-fired warm air furnaces broke two records in July, setting new highs for the fifth month in a row. An all-time mark for the first seven months of the year and a new record for July shipments have been established, the Gas Appliance Manufacturers Association reports.

A total of 412,000 units have been shipped to dealers and distributors in the first seven months of the year, for an increase of 35.1 per cent over the same period of last year. In July, 67,800 units were shipped, a gain of 27.4 per cent over July of last year.

Synthesis Gas Heating Value Upped in Mines Bureau Lab

Gas with a high heating value and most of the characteristics of natural gas has been produced on a laboratory scale by passing synthesis gas over a nickel-alloy catalyst, according to a Bureau of Mines report released recently by Secretary of the Interior Douglas McKay.

Snythesis gas, obtained from the gasification of coal, is a mixture of carbon monoxide and hydrogen with a relatively low heating value.

During a series of experiments in the bureau's Bruceton, Pennsylvania, laboratories extending over several years, it was found that passing synthesis gas over a partly leached nickel-alloy catalyst in a fluidized bed permits high throughput provided that the heat of reaction can be controlled. In the bench-scale tests reported, this was done by injecting the gas into the reactor at several points instead of only one. This method of operation served to distribute the heat throughout the reaction zone instead of concentrating it at one place.

The product gas is methane, the principal component of natural gas. It could be used in appliances designed for natural gas, as most of those now used in this country are.

The report says that when the catalyst lost its strength, additional leaching restored it to full activity. The same catalyst was treated in this manner several times.

The tests were conducted as part of the Bureau of Mines research program on synthetic fuels, and the report says that they yielded enough data to provide a basis for larger scale experimentation at some future time. They were designed to supplement the Bureau's studies on direct gasification of coal. This work is being done because of a growing demand for gaseous fuels and a realization that the supply of natural gas, like that of other mineral resources, is not inexhaustible.

A copy of R. I. 5137, "Synthesis of Methane," by Murray Greyson, J. J. Demeter, M. D. Schlesinger, G. E. Johnson, James Jonakin, and James W. Myers, can be obtained from the Bureau of Mines, Publications Distribution Section, 4800 Forbes Street, Pittsburgh 13, Pennsylvania. It should be identified by number and title.

Koppers Company Has Belgian Synthetic Ammonia Process

A noted European process by which the steel and other industries can get economical production of synthetic ammonia from coke-oven gas, refinery gases, or any other source of hydrogen, has been made available for the first time in North America.

Koppers Company, Inc., has been granted North American rights to design, construct and license plants to use the low-cost L'Azote process, developed in Belgium.

The gold half-millionth regulator was presented by Charles D. Peterson of Universal Controls Corporation to Harold W. Johnston of The Gas Service Company of Kansas City, Missouri.

Universal Controls Presents Half Millionth Regulator

Universal Controls Corporation celebrated the production of the half-millionth gas service regulator with a plant inspection and luncheon in July.

The half-millionth regulator, gold plated and mounted in a display case, was presented to Harold W. Johnson, general superintendent for The Gas Service Company of Kansas City, Missouri. Chas. D. Peterson, vice president and general manager of Universal Controls, made the presentation with a brief ceremony held at the regulator finishing line. Regulator number 500,000 was ordered for The Gas Service Company of Carthage, Missouri.

Koppers-Hasche Reformer Ordered by Easton Utilities

A purchase order for delivery of a Koppers-Hasche reformer to the Easton Utilities Commission, Easton, Maryland, has been received by the Metal Products division of the Koppers Company. It is expected that delivery will be made on or before October 15.

Consumers supplied by the Easton Commission will require no alteration in their gas heating or appliance equipment, for the gas to be produced by the new reformer will have burning characteristics similar to those of the presently distributed carburetted water gas. The Koppers-Hasche Reformer unit will have a capacity of 500,000 cu ft of gas per day—more than double that of the present facilities, which the new unit will replace.

Atlantic City to Be Scene Of 1958 AGA Convention

The executive committee of the American Gas Association has voted to hold the 1958 annual convention of the association in Atlantic City, New Jersey, the week of October 12. Members of the Gas Appliance Manufacturers Association are expected to vote early in 1957 as to whether an exhibit of gas appliances and equipment will be held in conjunction with the AGA convention in 1958.

Previously it had been decided to hold the 1956 annual convention of AGA in Atlantic City the week of October 15 and to hold the 1957 annual convention of the association in St. Louis, Missouri, October 7-9. There will be no GAMA exhibit in conjunction with either the 1956 or 1957 AGA conventions.

DEATHS

Howard T. DeRemer

Howard T. DeRemer, works manager, Selas Corporation of America, died suddenly at his home in Schwenksville, Pennsylvania, recently, as a result of a heart attack.

DeRemer joined the Philadelphia heat processing firm in 1951, coming from The Philadelphia Gear Works Company, where he was assistant plant superintendent. He previously was active as an industrial management consultant.

Henry R. Cook Jr.

Henry R. Cook, Jr., former vice president, Baltimore Gas and Electric Company, died recently in a hospital at Baltimore, Maryland. Cook was born in Brooklyn, New York, and was graduated from the Stevens Institute of Technology in 1905 with a mechanical engineering degree.

Cook joined the Baltimore company in 1918 as assistant engineer in the gas division.

He was elected vice president in 1938 and a director in 1947. He held these posts until he was retired in 1950.

He formerly served as a director of the American Gas Association.

R. C. Wirtz

R. C. Wirtz, secretary of the Alabama Gas Corporation died suddenly, July 30, from a heart attack.

Wirtz was educated at Brown University in New Jersey. He came to Birmingham in 1948 to become assistant secretary of the Alabama Gas Corporation and was appointed secretary in 1953.

Cruse-Kemper Now Division Of C. H. Wheeler Company

The steel plate fabricating plant at Ambler, Pennsylvania, and the field erection and gas holder inspection and repair business that have been conducted since 1903 by Cruse-Kemper Company are now being operated as the Cruse-Kemper division of C. H. Wheeler Manufacturing Company, Philadelphia, Pennsylvania.

Cruse-Kemper Company has for many years furnished a large variety of welded steel parts for condensers, pumps, deck machinery, and auxiliary equipment for the Wheeler company, and it is anticipated that this consolidation of interests of the two companies will materially increase their activities and broaden the scope of work at both plants.

Frank G. Deker will be in charge of the Cruse-Kemper division at Ambler, and the present personnel in office, shop, and field will continue to serve.

F. Regnault Fairchild and G. Barnett Fairchild will maintain offices at the Ambler plant and will operate the Cruse-Kemper Company as a holding company.

Beckman Instruments Buys Liston-Becker Company

Beckman Instruments, Inc., has disclosed purchase of the Liston-Becker Instrument Company, Springdale, Connecticut.

Liston-Becker is a leading manufacturer of infrared gas analyzers widely used in chemical and medical research and industrial process control. The firm also makes a specialized electronic amplifier of high sensitivity.

Max D. Liston, founder of the company, will continue as manager of Liston-Becker operation. No change in personnel or plant location in contemplated.

AGA Publishes Two Gas, Pipe Line Statistical Books

The 1955 edition of **Gas Facts,** annual statistical yearbook of the American Gas Association, containing 1954 statistics on the gas utility and pipe line industry, is now available. This 272-page publication contains pertinent information on energy reserves, production, transmission and distribution, underground storage, sales and utilization, finance, labor, and prices, in addition to a brief section containing Canadian statistics.

Among the new features are a separate income statement and balance sheet for pipe line companies alone, from 1941 to 1954; additional statistics on exploratory drilling for natural gas and/or oil; detailed tables showing appliance shipments by size, type of unit, and month of the year. The new edition also includes a table showing, for selected cities, the cost (in cents per million Btu) of various residential heating fuels since 1941, together with suggested fuel efficiency factors.

Extra copies of **Gas Facts** are available from the Bureau of Statistics, American Gas Association, at its headquarters in New York City at $2.00 per copy for the first five copies and $1.50 per copy for additional copies.

A condensed summary of gas industry statistics has been prepared and now is ready for distribution. Entitled **The Gas Data Book,** it is a pocket-sized publication, measuring 3½-in. by 6¼-in., and its 22 pages contain historical information on the principal measures of gas industry growth.

Tennessee Gas Signs Pacts For Canadian Pipe Lines

Tennessee Gas Transmission Company has signed a contract to buy 200,000 mcf of natural gas per day from Trans-Canada Pipe Lines, Ltd., at the international boundary near Emerson, Manitoba, Canada, with an option to buy an additional 200,000 mcf per day when and if it is available there.

Trans-Canada is proceeding immediately with its plan to build an all-Canadian natural gas pipe line from prolific producing fields in the Province of Alberta, in western Canada, across the nation to eastern Canada.

To market the Canadian gas to American consumers, Tennessee Gas proposes to construct a pipe line from the international boundary southeast 1050 miles through the states of Minnesota, Wisconsin, Illinois, Indiana, Kentucky, and Tennessee. It will connect near Nashville, Tennessee, with the company's main multiple-pipe line natural gas transmission system, which now extends from South Texas northeast across or into 15 states to northern New England.

The Canadian gas will be sold along the new Minnesota-Tennessee pipe line, principally to gas distribution companies having no present source of natural gas.

Sharples Operating Division of Pennsalt Chemicals

Sharples Chemicals, Inc. was dissolved as a corporation July 1 and became an operating division of Pennsylvania Salt Manufacturing Company.

Sharples was acquired by Pennsalt Chemicals in 1951. Operating plants in Wyandotte, Michigan, and Houston, Texas, it produces a wide variety of organic chemicals for the rubber, petroleum, pharmaceutical, mining, chemical, surface coating and natural gas industries. Its operations will continue without change.

Walworth Company Buys Southwest Fabricating

The Walworth Company has purchased assets and business of the Southwest Fabricating & Welding Company, Inc., pipe fabricating company, Houston, Texas.

Fred W. Belz, president of Walworth, 113-year-old manufacturer of valves and pipe fittings, said the acquisition would be based on an exchange of Walworth common stock for the Southwest Fabricating Company. He added that final details as to the number of shares of Walworth stock to be issued to Southwest Fabricating will be determined upon completion of final audit of the business of Southwest.

Walworth, with sales in excess of $42,000,000 annually, recently completed the acquisition of the M & H Valve and Fittings Company, a leading manufacturer of water works valves and fittings, as part of its expansion and diversification program.

Walworth operates plants at Anniston, Alabama; Boston, Massachusetts; East St. Louis, Illinois; Greensburg, Pennsylvania; Kewanee, Illinois, and Mineola, Long Island, New York.

Born Joins Collins Radio

Rear Admiral Arthur S. Born, USN (Retired), has joined Collins Radio Company, Cedar Rapids, Iowa. He is assistant to the vice president, research and development.

Williams Furnace Company Moves to New Plant

Increasing demand for the company's counterflow vented recessed heater and additional space requirements for the production of the coming line of forced air furnaces is given as the reason for the move of the Williams Furnace Company to its new plant near Buena Park, California.

The factory is located at 14960 Firestone Boulevard. Nearly five acres of land will permit expansion as required.

The new building, of tilt-up slab construction, has a floor area of 36,000 sq ft, nearly double that of the former Glendale, California, buildings. In addition, side and rear yards are paved for parking and outside storage and work areas. A railroad spur at the rear and depressed shipping docks will greatly improve shipping and receiving.

The modern machinery layout is designed for continuous flow of parts and material from raw metal to cartoned heaters. Assembly lines for "Uniflow" or "Forsaire" vented recessed heaters will operate simultaneously with furnace assembly lines.

Increased laboratory facilities in the new factory will greatly assist the engineering and development program.

Gas Industry CALENDAR

SEPTEMBER

11-13 INGAA, annual membership meeting, Jasper Park Lodge, Jasper National Park, Alberta.

14-15 AGA, accident prevention conference, Marion Hotel, Little Rock, Ark.

15-16 Action demonstration cities, representatives, Lincoln, Nebr.

16-17 Maryland Utilities Association, fall conference, Virginia Beach, Va.

18 GAMA industrial gas equipment division, Warwick Hotel, Philadelphia.

25-30 International Gas Union, 6th conference, Hotel New Yorker, New York.

28 GAMA and AGA, gas industry development committee, New York.

28 SGA distribution design and construction conference, East, Tutwiler Hotel, Birmingham, Alabama.

28 SGA distribution design and construction conference, West Marion Hotel, Little Rock, Arkansas.

OCTOBER

12-14 GAMA annual meeting, El Mirador, Palm Springs, Calif.

12-14 Wisconsin Utilities Association, electric and gas section, Schroeder Hotel, Milwaukee.

17 AGA board of directors, Los Angeles.

17-19 AGA-PCGA joint-convention, Los Angeles.

17-21 National metal show (AGA exhibit) Philadelphia.

18-21 American Dietetic Association, St. Louis (AGA exhibit).

18-22 National Safety Congress, exhibition, Chicago.

19 AGA, industrial gas breakfast, Penn Sherwood Hotel, Philadelphia.

21-Nov. 3 American School Food Service Association, Denver (AGA exhibit).

24-26 American Standards Association, Sheraton Park Hotel, Washington.

24-26 Pacific Coast restaurant convention, Biltmore Hotel, Los Angeles.

24-27 National Association of Railroad & Utilities Commissioners, Ashville, N. C.

NOVEMBER

7-11 National Hotel Exposition, Kingsbridge Armory, New York. (AGA exhibit.)

13-18 ASME, Congress and Hilton hotels, Chicago.

14-17 API, San Francisco.

16-18 Southeastern Gas Association, Roanoke, Va.

28-30 SGA advisory council and management conference, Point Clear, Ala.

DECEMBER

1 NEGA appliance servicing conference, Hotel Statler, Boston, Massachusetts.

1-2 AGA-EEI conference planning group, AGA headquarters.

JANUARY 1956

10 NEGA, operating division, Hotel Statler, Boston.

23-24 Industrial Heating Equipment Association, LaSalle Hotel, Chicago.

FEBRUARY 1956

6-10 Western Winter Radio-Television and Appliance Market, Western Merchandise Mart, San Francisco.

MARCH 1956

12-16 National Association of Corrosion Engineers. Hotel Statler, New York.

19-21 Mid-West Gas Association, Hotel Fontenelle, Omaha, Nebr.

22-23 NEGA, annual meeting, Hotel Statler, Boston.

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